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ABSTRACT

For a number of years, the 16 ERIC Clearinghouses have tracked educational issues and trends in their respective special areas of concern. This is the first unified collection of papers resulting from the tracking effort. Each paper contains an analysis of research, practice, and policy in the scope area covered by the authoring Clearinghouse. The chapters also recommend possible actions for achieving improvement and change. The preface by A. Harry Passow is entitled "Issues and Trends in Education: Some Observations and Reflections." The 16 chapters, written by Clearinghouse management staff, are as follows (in order by Clearinghouse prefix): (1) CE--"Some Current Issues in Adult, Career, and Vocational Education" by Juliet V. Miller and Susan Imel; (2) CG--"Current Issues and Trends in Guidance and Counseling" by Garry R. Walz; (3) CS--"Two Problems in the Teaching of English" by Charles Suhor; (4) EA--"Improving School Effectiveness through Reform of Teacher Selection Practices and Collegial Observation of Classroom Performance" by Thomas I. Ellis, Mary Cihak Jensen, Philip K. Piele, and Stuart C. Smith; (5) EC--"Current Issues and Future Directions in Special Education" by June B. Jordan and Donald K. Erickson; (6) FL--"Developments in Language Education" by John L.D. Clark; (7) HE--"Emerging Trends in Higher Education" by Judy Diane Grace and Jonathan D. Fife; (8) IR--"Education and Information Technology: What Are the Questions?" by Donald P. Ely; (9) JC--"Contemporary Issues in Community Colleges: A Synopsis" by Arthur M. Cohen; (10) PS--"Current Issues in Early Childhood Education" by Lilian G. Katz; (11) RC--"Issues in American Indian Education, Mexican American Education, Migrant Education, Outdoor Education, Rural Education, and Small Schools" by Elaine Roanhorse Benally, Jack T. Cole, and Manuela Quezada-Aragon; (12) SE--"Persistent Problems in Precollege Mathematics, Science and Environmental Education: Issues, Trends, and Recommendations" by Robert W. Howe, Patricia E. Blosser, Marilyn N. Suydam, Stanley L. Helgeson, and John F. Disinger; (13) SO--"Core Content, Critical Thinking, and Civil Values: Issues on Education in the Social Studies" by John J. Patrick; (14) SP--"Three Crucial Issues Concerning the Preparation of Teachers for Our Classrooms: Definition, Development, and Determination of Competence" by Elizabeth A. Ashburn; (15) TM--"Current Issues in Testing, Measurement, and Evaluation" by S. Donald Melville, Jacob G. Beard, C. Philip Kearney, Rodney Roth, and Jason Millman; (16) UD--"Issues in Improving Urban Schools: Dropout Prevention, Hispanic Secondary Education, and Urban Teaching Careers" by Erwin Flaxman and Carolyn Riehl. (AA)

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Trends and Issues in Education, 1986, is a collection of essays written by the directors and associates of the sixteen ERIC Clearinghouses.

The Educational Resources Information Center (ERIC) is a national information system in education, funded by the Office of Educational Research and Improvement of the U.S. Department of Education. The Clearinghouses, each with a special subject area, collect, analyze, and disseminate current educational information to professional educators and the public in the United States and throughout the world.

For a number of years, the ERIC Clearinghouses have tracked issues and trends in their special areas of concern. _Trends and Issues in Education, 1986_, is the first collection of these reviews. Each chapter contains an analysis of the research, practice, and policy in several areas of great educational importance or national priority. The chapters also recommend possible actions for improvement and change.

Each chapter presents the best current thinking of educational experts about approximately fifty educational concerns. The ERIC Clearinghouses which have prepared these chapters are sources of further information.

Erwin Flaxman
General Editor, _Trends and Issues in Education, 1986_

TABLE OF CONTENTS

P. Preface. Issues and Trends in Education: Some Observations and Reflections, by A. Harry Passow

I. Some Current Issues in Adult, Career, and Vocational Education, by Juliet V. Miller and Susan Imel

II. Current Issues and Trends in Guidance and Counseling, By Garry R. Walz

III. Two Problems in the Teaching of English, by Charles Suhor

IV. Improving School Effectiveness through Reform of Teacher Selection Practices and Collegial Observation of Classroom Performance, by Thomas I. Ellis, Mary Cihak Jensen, Philip K. Piele, and Stuart C. Smith

V. Current Issues and Future Directions in Special Education, by June B. Jordan and Donald K. Erickson

VI. Developments in Language Education, By John L.D. Clark

VII. Emerging Trends in Higher Education, by Judy Diane Grace and Jonathan D. Fife

VIII. Education and Information Technology: What Are the Questions, by Donald P. Ely

IX. Contemporary Issues in Community Colleges: A Synopsis, by Arthur M. Cohen

X. Current Issues in Early Childhood Education, by Lilian G. Katz

XI. Issues in American Indian Education, Mexican American Education, Migrant Education, Outdoor Education, Rural Education, and Small Schools, by Elaine Roanhorse Benally, Jack T. Cole, and Manuela Quezada-Arazon

XII. Persistent Problems in Precollege Mathematics, Science, and Environmental Education: Issues, Trends, and Recommendations, by Robert W. Howe, Patricia E. Blosser, Marilyn N. Suydam, Stanley L. Helgeson, and John F. Disinger

XIII. Core Content, Critical Thinking, and Civic Values; Issues on Education in the Social Studies, by John J. Patrick

XIV. Three Crucial Issues Concerning the Preparation of Teachers for Our Classrooms: Definition, Development, and Determination of Competence, by Elizabeth A. Ashburn

XV. Current Issues in Testing, Measurement, and Evaluation, by S. Donald Melville, Jacob G. Beard, C. Philip Kearney, Rodney Roth, and Jason Millman

XVI. Issues in Improving Urban Schools: Dropout Prevention, Hispanic Secondary Education, and Urban Teaching Careers, by Erwin Flaxman and Carolyn Riehl

PREFACE

ISSUES AND TRENDS IN EDUCATION: SOME OBSERVATIONS AND REFLECTIONS

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The Reform Movement

In April 1983, the publication of the report of the National Commission on Excellence in Education (1983) titled A Nation at Risk: The Imperative for Educational Reform began what has become known as "The Year of the Educational Reform Reports." A publication of the Education Commission of the States (1983) observed:

> Hardly a month has passed without the release of a major report by a prestigious group of citizens concerned about the nature of American education. And sprinkled between the major releases have been dozens of state task force reports, interim studies and articles about school renewal, effective schools, business-school partnerships or ways to meet the educational needs of a rapidly changing society. (p. 1)

A year later, a United States Department of Education publication titled The Nation Responds: Recent Efforts to Improve Education opened with the observation that: "During that year [1983], deep public concern about the nation's future created a tidal wave of school reform which promises to renew American education. Citizens, perplexed about social, civic, and economic difficulties, turned to education as an anchor of hope for the future of their Nation and their children" (p. 11). By May 1984, the Education Commission of the States counted at least 275 state-level task forces working on some aspect of school reform with governors, legislators and state education departments vying for leadership. The report noted that the comprehensive nature of the reform proposals gave promise for "significant long-lasting change." The reform efforts, the report noted, were "not narrow in origin, focus, support or goals" with task forces including "citizens, parents, students, teachers, administrators, business and community leaders, and elected and appointed public officials" (p. 15). It is doubtful that America's schools had ever been the focus of such widespread, intensive efforts to reform them, not even in the post-Sputnik era which was labeled "The Era of Curriculum Innovation."

While the flood of reports has tapered off somewhat, some are still being released. For example, during 1986, two reports were issued, both concerned with the reform of teacher education and the teaching profession. One was a report from a consortium called the Holmes Group (1986) titled Tommorrow's Teachers, which covered teachers as both a butt of criticism and the best hope for reform. The other was prepared by the Carnegie Forum on Education and the Economy (1986): A Nation Prepared: Teachers for the 21st Century. The Carnegie Forum underscored a theme which was central in A Nation at Risk: the relationship of education to the economy.

In August 1986, The National Governors' Association's Center for Policy Research and Analysis (1986) issued Time for Results: The Governors' 1991 Report on Education. Continuing a central theme from A Nation at Risk, the governors argued: "Better schools mean better jobs. Unless states face these questions, Americans won't keep our high standard of living. To meet stiff competition from workers in the rest of the world, we must educate ourselves and our children as we never have before" (p. 2). A former U.S. Commissioner of Education, Harold Howe II put it this way: "Frustration over the diminishing capacity of the U.S. to compete in worldwide markets has awakened new interest in the old idea that the quality of human resources is a key element in the efficiency of the nation's economy (National Commission on Excellence in Education, 1983, p. 168).

The National Commission on Excellence in Education (1983) listed 13 "education dimensions of risk," including poor achievement test scores, declines in both the enrollments and achievement in mathematics and science, high costs incurred by business and the military for remedial and training programs, unacceptable levels of functional illiteracy found among both children and adults, failure of half the population of gifted students to match achievement with their tested ability, and poor performance by American students on cross-national achievement tests.

The National Governors' Association (1986) expressed its concerns about education by asking and answering what the report calls "seven of the toughest questions that can be asked about education in the U.S.A., questions which must be answered if there are to be better schools" (p. 2). These "tough questions" were as follows:

- Why not pay teachers more for teaching well?
- What can be done to attract, train, and reward excellent school leaders?
- Why not let parents choose the schools their children attend?
- Aren't there ways to help poor children with weak preparation succeed in school?
- Why are expensive school buildings closed half the year when children are behind in their studies and many classrooms are overcrowded?
- Why shouldn't schools use the newest technologies for learning?
- How much are college students really learning? (p. 2)

Other questions also come to mind as one reads Time for Results (National Governors' Conference, 1986): Are these the right questions that should be asked about education and schooling today? Are they the most important issues to address and resolve? Is the involvement of governors and legislators in shaping the direction and nature of school reform promising or worrisome for our schools? It is interesting to reflect on the Governor's questions when juxtaposed with the issues and trends identified in the following chapters by the ERIC Clearinghouses. What follows are some observations and reflections on the trends and issues from one viewpoint.

American Society and Schooling

In Time for Results Governor Alexander comments on

> how huge changes in the structure of America, its families and population, make our crusade for better schools even harder. In 1985, just 7 percent of our households had a working father, a mother who stayed home, and two or more children. Of all the children born in 1983, 50 percent will live with one parent before reaching age 18. We are told that by the year 2000, approximately one-third of our population will be "minority." Already more than half the students in many of the nation's largest public schools are non-white, and this percentage is certain to increase (National Governors' Association, p. 6).

These changes, plus a variety of other social, political, health, cultural, economic, and other factors, clearly impinge on education and schooling, but the proposals for school reform seem hardly to take cognizance of them.

In some ways, however, the changes taking place with respect to youth and adolescents are even more striking for their impact on education and schooling. A recent report noted that each year more than a million teen-agers become pregnant, 400,000 of them end their pregnancies by abortion, and "a U.S. teen-ager under age 15 is five times more likely to give birth than her peers in any other developed nation studied by the panel" (Viadero, 1986, p. 16).

Although adolescent drug and alcohol abuse seems to have levelled off somewhat, it is still a significant part of the epidemic which exists in American society at large and which has triggered a panic-like response from the federal government on down. In 1986, measures for dealing with controlled substance abuse was a major campaign issue.

Teen-age suicides continue to rise.

The dropout problem has not diminished and continues at an alarming rate. Moreover, the dropout rate is especially high among minorities and the impoverished, and the personal, economic and social consequences of dropping out of school are disproportionately felt by those groups. The unemployment rate of dropouts, for instance, is three times that of high school graduates.

While literature, studies, and debate on these problem areas grow and intensify, the poor showing of American students on standardized achievement tests and in comparisons with other nations is constantly recalled and every instance of bottoming out or levelling off is cited hopefully. Functional illiteracy--defined in different ways--is found among children and adults at rates which are considerably high for an industralized nation. The high rates of illiteracy are not limited to new immigrants with limited English ability but apply to native born Americans as well. Finally, the educational gap between advantaged and disadvantaged (i.e., racial and ethnic minorities and the poor) has not been narrowed despite concentrated efforts.

The Nature of School Reform

Somehow educators and the public seem not to be able to recognize the interconnectedness of these and other data. Nor are we able to arrive at consensus on what the goals and purposes of education in America should be, or what the appropriate functions of schooling are. The goals of education cited by the respondents of surveys taken by some of the authors of school reform reports tend to be broad and encompassing--"We want it all," both Goodlad (1983) and Boyer (1983) reported. Goodlad (1983) found that parents, teachers and students "see as important all four of those goal areas [intellectual, personal, vocational and social] which have emerged over the centuries and which had become well established in the rhetoric of educational expectations for schools decades before the 1970s" (p. 38). But, there are significant differences in the interpretation of what implementation of these goals means at the building, district, state, and federal levels, especially with respect to the personal and social goals.

In the pursuit of excellence in our schools, setting higher requirements for graduation from high school, having students take more of the basic subjects such as mathematics and science, eliminating "soft" subjects, testing more frequently, lengthening the school day and school year are among the recommendations for achieving higher levels of academic performance. What caught the attention of the Governors' Association and involved them in the efforts to reform schools was the threat to the jobs of their constituencies. What Governor Alexander and his colleagues observed when they went to the Far East was "children who learn more languages and go to school more days than our children. In Korea, we see people in one of the most literate nations working seven days a week for $3,000 a year. Even in the poorest parts of China, we find children studying English" (p. 5). There are those who argue that there are economic, cultural, political and other factors as well as educational systems that account for the international trade deficit and the problems of competing with the Japanese, Koreans, Taiwanese and other Asian economies, but the poor showing of American students on the international academic sweepstakes are still cited significant cause for the trade gaps.

American society has undergone and continues to undergo drastic changes which affect schools and the schooling process. At the same time, American schools have undergone and continue to undergo drastic changes which affect the processes of schooling. The California Commission for Reform of Intermediate and Secondary Education (1975) commented then that "schools everywhere reflect a troubled society and a troubled youth" and that adolescents were "more mature physically and more aware of the world around them" (p. x).

There have been profound changes in the students, the families and communities from which they come, and the schools which they attend. These changes include those in the authority, power, interpersonal and professional relationships as well as the instructional processes. The perception of schools and schooling on the part of students and their parents has changed as well. Adversarial relationships between students and faculty, between faculty and administration, between schools and parents/communities have increased and the cooperative efforts have changed.

The Changing School

While there is debate concerning the accuracy of the depiction, Sizer's A Study of High Schools (1984) portrays a school which is very different from the one Conant (1959) described in his Study of the American High School. Sizer describes a deal or compromise made by teachers and students that they will not hassle each other so that the school will be an undemanding and calm place. In the companion volume, Powell, Farrar, and Cohen (1985) use the metaphor of the high school as a shopping mall, a place where a large and varied student body is kept happy by a variety of educational opportunities which provide "something for everybody." The contrasts between the high schools Conant and his staff observed, schools in which students and teachers studied and taught in orderly classrooms, and those Sizer and his staff depicted are sharp and suggest different roles, functions, and relationships for all of the participants in today's schools.

For the past 15 years or so, school discipline has been at the top of the concerns of parents and school staffs. School violence and vandalism, absenteeism and truantism, rampant class cutting have been part of the secondary education scene to an extent which was unthinkable two decades or so ago. In some school systems, security guards are part of the "normal" scene. As Passow (1984) observed: "Some high schools are depicted as restricted prison-like communities; others as war zones in which a truce has been declared between students and teachers; and still others as thriving, living communities in which real learning flourishes. Of course, schools are all of these and more" (p. 92).

Whether or not Sizer's notion that teachers and students have to compromise in order to survive is accurate, there is no question that teachers and the teaching profession have changed in the past few decades. The emergence of what is sometimes described as "teacher militancy" with the growth of collective bargaining agreements has altered relationships among teachers, administrators, boards of education, and communities. Other factors, such as the women's movement, have resulted in changes in who goes into teaching and who remains. Minority teachers whose numbers were increasing have recently been decreasing to a point where they are a vanishing breed in many states.

Although America has always been "a nation of immigrants, particularly since World War II, a variety of national, ethnic, and cultural groups have swelled the immigrant ranks and filled the classrooms. Language and cultural diversity has increased, especially as minority groups have become more sensitive to their own cultural heritage and native languages. In addition to the flow of immigrants--both legal and illegal--there continue to be significant population shifts from rural to urban areas, from urban to suburban areas, from the south to the northeast and west, from the snowbelt to the sunbelt which have all resulted in more heterogeneous and diverse populations into what were once considered relatively heterogeneous neighborhoods and schools.

The Policy Analysis for California Education group (PACE, 1985) predicts that by 1990, minority enrollment in K-12 will be greater than 50 percent resulting in a "majority of minorities." Almost of a quarter of California's 5- to 17-year olds now speak a language other than English at home; students with limited English proficiency, speaking 41 different primary languages, already comprise 11.9 percent of the K-12 population (p. 1). While most other states are affected less by their immigrant population than is California where an estimated 25 percent of the nation's immigrants are currently settled, the data remind us that the schools, their pupil populations, the communities in which they operate, and the society which they serve are different from those of a generation or two ago in many respects. Educational planners, researchers, and practitioners cannot ignore these changes.

Observations and Reflections on Trends and Issues

It is in this context of a changing school and society that education trends and issues must be considered. Many important educational issues must be thought about in terms of the current and emerging contexts. The observations and reflections which follow are prompted by the trends and issues presented by the ERIC directors and associates in the papers in the following chapters.

The Dilemmas of Equity and Excellence

Among other reform bodies, the National Commission on Excellence in Education (1983) asserted its belief that a commitment to educational excellence "must not be made at the expense of a strong commitment to the equitable treatment of our diverse population. The twin goals of equity and high-quality schooling have profound and practical meaning for economy and our society, and we cannot permit one to yield to the other either in principle or practice" (p. 13).

In the attainment of these twin goals, a number of issues arise. The concepts, both ideological and pragmatic, of "uniformity" and "diversity" are especially prominent. Basically, the schism is between those who believe that there is a common body of knowledge and skills to be transmitted to all through a common curriculum, and those who believe in differentiated curricula and groupings to provide for the individual differences which exist among students. Arguing for the first position, Adler (1982) states: "To give the same quality of schooling to all requires a program of study that is both liberal and general, and that is, in several, crucial, overarching respects, one and the same for every child. All sidetracks, specialized courses, or elective choices must be eliminated" (p. 21). Others argue as strongly for the second position, asserting that all aspects of the educational process--goals, curricula, instructional strategies, staff, resources, grouping, and evaluation--must be differentiated to provide for the individual needs of students.

The dilemmas raised are ones with which educators have long grappled: do equity and excellence mean exposing all students to the same content? Should there be common standards or only minimum standards beyond which individuals are free to go? Do we differentiate instructionally and provide for diversification--or is any kind of differentiation to be avoided? Does equality of educational opportunity mean only equal access to knowledge or equal acquisition of the same knowledge?

One of the main themes found in the school reform activities of the states has been that of higher and more rigorous standards for students. Almost all of the states have raised the requirements for graduation from high school, increasing the number of academic courses students must take and reducing the electives and options available. Will mandating higher standards and assessing their attainment result in greater excellence or will it contribute to greater inequity if minority and poor students fail to meet the higher standards? What concept of excellence should guide educators and society?

Early Childhood and Elementary Education

Since the 1960s when Head Start and a variety of other pre-school and early childhood programs came into being to provide compensatory education for the disadvantaged, the education of young children has flourished, but not without controversy. Studies of provisions for early childhood education over the past 20-plus years have not fully resolved the question of whether early intervention is effective. Considerable data are available concerning the lasting effects of compensatory education progams for young children, but the findings are interpreted in different ways and are not considered convincing by critics of such programs. Part of the controversy stems from the tremendous diversity in the quality of such programs and from the differences in the purposes and programs provided.

Nevertheless, pre-school and early childhood programs continue to proliferate. The trends toward the downward extension of programs for pre-schoolers (mainly four-year olds) and the growth of publicly supported all-day kindergarten programs have raised a number of issues. One issue has to do with the benefits and dangers of such programs--whether youngsters are really helped or hurt by such programs in terms of their cognitive, affective and physical growth and development. Another set of issues has to do with the nature of such programs--what are appropriate goals for preschool education? There seems to be consensus that preschool and early childhood programs should not be downward extensions of elementary education. Should the curriculum be academically, affectively, therapeutically or otherwise oriented? How structured should the program be? Some early childhood educators urge that a major, if not primary purpose of early childhood education is to develop the skills and attitudes to become a student or learner--i.e., the program should stress meta-cognition and learning-how-to-learn skills plus positive attitudes toward learning.

One of the more interesting trends of recent years is a questioning of pre-school education on the basis that young children are being pressured too early and pushed too fast academically. Clearly young children have different needs: some require basic experiences to prepare them for more formal schooling while others are ready for enrichment. Overall, the research and evaluation data tend to support the importance of appropriate learning opportunities for young children, especially those who are disadvantaged and considered at-risk.

As has happened in the past, reform reports tend to focus on secondary education as the institution needing "drastic change." However, from time to time as criticisms arise regarding the inability of students to read, write, and spell; to master mathematics and science; to think critically; and to perform satisfactorily in general, elementary education also comes under scrutiny. In September 1986, Secretary of Education Bennett issued First Lessons: A Report on Elementary Education in America (1986), a document which he described as the first major national report on elementary education since 1953. Some readers of First Lessons were surprised yet pleased by Bennett's conclusion that "American elementary education is not menaced by a 'rising tide of mediocrity.' It is, overall, in pretty good shape. By some measures, elementary schools are doing better now than they have in years. Yet elementary education in the United States could be better still" (p. 1).

Bennett recommends that elementary schools develop a well-defined set of curricular goals and use the whole curriculum for teaching all students to read and write; provide hands-on science experiences; teach students civic, historical, geographic, and cultural literacy through social studies programs based on history, geography, and civics; provide instruction in the arts as integral parts of the program; enable students to grasp the uses and limits of computers; and include instruction in health and physical education. None of these recommendations are very different or controversial. Nor is his advocacy of a strong "reciprocal relationship" between parents, who are "children's first and most influential teachers," and the schools, recognizing that "we face large changes in the structure of the families in which our children are raised" (p. 8). The controversy over Bennett's report centers on his proposals for the development of character and morality; his commitment to phonics in the teaching of reading; his proposal that social studies, not social science be taught; and some of his suggestions for enlarging total instructional time. Among his suggestions for enlarging the total instructional program. Bennett proposes that schools set priorities and permit parents to choose among them:

> Schools need not all assemble the curriculum into identical packages or give precisely the same weight to every element. So long as a minimum "core" is taught by every school in the district, who not encourage diversification and specialization, much as "magnet school" programs do today, and then permit parents to select the curricular emphases and instructional strategies they favor for their children. (p. 41)

Bennett's discussion of elementary school professionals--the principal and the teachers--seems to concur with the recommendations of other reports that teachers be involved in significant areas of decision making. One of his Study Group members is quoted in this regard: "Teaching has many of the same characteristics as other professions, including mastery of a body of knowledge. Yet it is denied important rights and responsibilities, such as setting its own standards for judging performance. We tell teachers what they should do, rather than listening to them define what needs to be done" (p. 47). There is little argument that "elementary schools are not established simply to provide protective custody for children" (p. 53); that schools must develop student self-discipline; or that textbooks must be tools for learning, not "a dumping ground for facts" (p. 62). Bennett concludes that "if our communities demand excellence as a goal in their elementary schools, and if principals and teachers are given the necessary resources and professional autonomy, excellence will result" (p. 65). In sum, the Secretary of Education's verdict on elementary education is that we have the will and the imagination to make elementary schools even better.

When the National Assessment of Educational Progress (1986) recently reported on how poorly American children write, there was a clamor for the schools to start doing better. While the elementary schools may not receive the same kind of overall attention given to secondary schools, colleges and universities, elements of their programs are continually critiqued and the focus calls for change so that we can compete with other nations. There may even be calls for change because significant segments of our pupil populations are not being served as well as they might--such as the disadvantaged at-risk children, the handicapped, the gifted; or areas of their education are not being attended to--such as their affective development.

In this connection, well over 80 percent of Chapter I programs are focused on early childhood and elementary education. Controversy continues regarding the nature of students who participate and the basis for selection--should student selection be based on poverty or low achievement or both? Since a majority of programs are aimed at improving the basic skills areas of reading and mathematics, which curriculum and instructional strategies are most effective with which pupils under which circumstances? Should compensatory education be aimed at remediation or development or both? How shall compensatory activities be integrated with regular instructional activities? How shall schools deal with the issues surrounding bilingual education, including instruction in the child's native language and those with limited or no English? Is there value in teaching conceptual and thinking skills as separate areas of study? Are there cognitive strategy training models which are appropriate for disadvantaged students? To what extent and in what ways should individual diversity--cultural, gender, or economic differences among students--be taken into account in designing instruction for them? Are we putting disadvantaged children at further disadvantage by labeling them as such and placing them in special educational programs? What kinds of programs and services will provide for the affective development of disadvantaged students? Millions of disadvantaged children and youth are in need of compensatory educational services and probably fewer than one-half are involved in Chapter 1 programs; how can all of the students who need assistance be provided with it whether or not supported by federal aid? Closing the gap between the advantaged and the disadvantaged remains one of American education's greatest challenges, and while research and experiences have provided considerable insights and understandings regarding the nature of appropriate compensatory education, the entire field is subject to a great many controversies.

Discipline/Subject Curriculum Areas

For educators, a perennial curriculum issue involves questions of what should be taught to whom; when, how, under what circumstances; using which materials and resources; and how should it be organized and evaluated. For almost a century, beginning with the report of Committee on Secondary School Studies (better known as the Committee of Ten) in 1893, there have been reports regarding the curriculum. Sometimes these reports have dealt with the curriculum in terms of specific subjects or courses, and sometimes these reports have dealt with the more general questions of curriculum content, scope, sequence, and integration. The Committee of Ten's report covered the overall secondary school program, proposing ten units of constants and six of electives. The Committee's nine subject area subcommittees spelled out in detail what was to be taught, when to begin, how often, and for how long. Thus taken as a whole, the report of the Committee of Ten dealt with the overall program as well as the substance and methods of the nine subject areas which could be part of it.

In the early 1950s, with Arthur Bestor's Educational Wastelands (1953) in the vanguard, there was a call for abandoning "life adjustment" and "progressive" education and a return to basic academic disciplines and systematic intellectual training. The launching of Sputnik in October 1957 resulted in a decade that was called "The Era of Curriculum Innovation," during which there were calls not only for students to take more mathematics, science, foreign languages and other subjects, but for the development of courses based on the structures of the disciplines with a concern for inquiry training as well. A concern for the disadvantaged and passage of the Elementary and Secondary Education Act of 1965 led to major efforts in curriculum and instructional materials development, especially in the area of reading and mathematics at the elementary school level.

Then, in the 1970's, controversy over "curriculum relevance" resulted in the development of alternative and optional curricula, a far cry from the recommendations of a decade before. As one national committee put it: "Every adolescent should, with proper guidance, be able to select those forms of schooling and learning most congenial to his basic learning style, philosophical orientation, and tastes" (Brown, 1973, pp. 99-100).

When the flood of reports appeared in 1983-84, most had a good deal to say about strengthening the curriculum in the sense of courses or a program. The National Commission on Excellence in Education (1983) complained that: "Secondary school curricular have been homogenized, diluted, and diffused to the point that they no longer have a central purpose. In effect, we have a cafeteria-style curriculum in which the appetizers and desserts can easily be mistaken for the main course" (p. 18). The Commission's recommendation was that all students be required to take Five New Basics which form "the core of the modern curriculum" and consist of four years of English, three years of mathematics, three years of science, three years of social studies, and one-half year of computer science. College-bound high school students were urged to take two years of a foreign language in addition to those taken in the earlier grades. Since its report devoted only a short paragraph to what each of the subject areas should equip graduates to do, the matter of curriculum content and organization are barely touched. In addition, the Commission urged that the "high school curriculum should also provide students with programs requiring rigorous effort in subjects that advance student's personal, educational, and occupational goals, such as fine and performing arts and vocational education. These areas complement the New Basics, and they should demand the same level of performance as the Basics" (p. 26). Since the New Basics occupy 13.5-15.5 units, the time available for these other subject areas is somewhat limited unless the school day is extended in accordance with another recommendation.

Other reports also laid out curriculum priorities. Most included a common core of general education not unlike that of National Commission on Excellence in Education. They criticized the curriculum tracks (academic/ college preparatory, general, and vocational) commonly found in high schools as being inherently discriminatory, creating second-class citizens, and contributing to social inequality. Alder's Paideia Proposal (1982) recommended common objectives and a common curriculum for all K-12 students involving three different modes of teaching and learning to acquire organized knowledge; develop intellectual skills; and enlarge understandings, insights, and aesthetic appreciation. Sizer's Horace's Compromise (1984) recommended organizing high schools into four curriculum areas: (1) inquiry and expression, (2) mathematics and science, (3) literature and the arts, and (4) philosophy and history.

In general, the reports urged more stringent requirements in and "strengthening" of the traditional academic subject areas, fewer "soft non-essential" courses, reduction or elimination of vocational courses, elimination of the general track, and reduction of elective and options. Only the second volume of the report of the National Science Board Commission on Precollege Education in Mathematics, Science and Technology, Educating Americans for the 21st Century: Source Materials (1983) provided detailed recommendations concerning content scope and sequence for K-12 mathematics, science and technology. Thus, unlike the post-Sputnik reformers who tackled the substance of the curriculum--the content, methods, materials, and organization--and proposed new curricula in most discipline/subject areas, the reformers of the 1980s simply urged, as did the National Commission on Excellence in Education, that various discipline/subject based professional groups continue "to revise, update, improve, and make available new and more diverse curricular materials" (p. 27). The many important issues involved in each of these curricular areas are left to other groups to deal with.

There are a number of issues regarding curriculum in various subject areas--considerable diversity regarding nature and purpose, framework and conceptualization, organizing basis, content, etc. For example, Brubaker, Simon and Williams (1977) have identified five conceptualizations of social studies curricula, including: (1) social studies as knowledge of the past and a guide to good citizenship, (2) social studies in the student-centered tradition, (3) social studies as reflective inquiry, (4) social studies as structure of the disciplines, and (5) social studies as socio-political involvement (p. 201). Each conceptualization implies different objectives, a different content scope, and a different sequence of activities. To recommend or to require three or four years of social studies says nothing about what those years shall consist of nor does it resolve the many curriculum issues in that subject area. As Patrick notes in Chapter XIII, to recommend "a core of common learning" does not answer such questions as "What core content should all students be expected to learn through education in the social studies? Why should they be expected to learn it? How should it be organized and presented to students" (p. 3). Even when there is agreement the core content should be anchored in the social science disciplines, there is disagreement regarding which academic disciplines as well as the selection of content and its sequencing. To what extent should students experience a variety of perspectives of social scientists--historians, geographers, sociologists, political scientists, economists, and others? What curriculum organization will provide optimum linkage between the past and the present? Should content be organized chronologically? conceptually? thematically? by problem area?

A California State History-Social Sciences Curriculum Advisory Committee (1985) has recommended that the curriculum should provide for "an upward spiral of recurring themes and concepts at gradually more challenging levels...focusing attention on the vitality of history, the development of civic skills, the importance of broad perspectives, the significance of the role of geography, and understanding of our nation's pluralistic society" (p. HS-7). The suggested curriculum also aims to help students "learn to apply abstract reasoning and hypotheses--testing skills, be able to distinguish among relative values, make choices that benefit themselves and others, and have the opportunity to involve themselves in democratic processes" (p. HS-4). The implementation of these goals raises a number of issues: What basic beliefs and ideals about America are to be taught? Which values are to be discussed? How do schools deal with charges of teaching "secular humanism" and all that is implied by that term? What is meant by critical thinking as applied to the substance of social studies? How is cultural pluralism to be understood? How is indoctrination to be avoided? To what extent are local norms and values to be honored when they are in conflict with broader society norms? How will schools deal with the celebration of the bicentennial of the Constitution? Should schools teach students to question national policies and societal traditions? Are teachers able and willing to explore controversial issues with their students?

English

In the the field of English, three language arts curriculum models seem to represent the contemporary thinking of English teachers: (1) the heritage model in which "the point of learning literature and language is to join one's culture and to participate fully in the life of this larger source of meaning;" (2) the process model based on the notion that "children develop best when allowed to develop at their own respective paces, in directions of their own choosing, toward values they discover on their own," and (3) the competencies model which "aims at establishing observable competencies through a curriculum based on discrete, carefully defined tasks which students will master, each at his own rate" (Fancher, 1984, pp. 61-62). Each of these provides different answers to questions concerning content, methods, and materials. In Chapter III, Suhor contrasts the models of English as content (knowing) and English as process (doing) and discusses a number of issues regarding "the selection of appropriate materials and the processing of those materials via oral and written language." His own preference is to view "English as the ordering of personal and vicarious experiences through language." A wide range of issues are still being debated regarding the "body of information that can illuminate content and process instruction in English;" the rationales for and approaches to teaching grammar, including questions of which grammar; the writing process and writing process instruction; the nature and extent of providing different students with different kinds of literature and literature of different quality; optimum ways of "connecting the world of the student with the world of ideas." There seems to be no disagreement that students read with different degrees of competence and comprehension; how should these differences be dealt with--by different goals, content, pedagogical strategies, or none of these? What do "four years of English" mean in this context?

Sciences

In the areas of science and mathematics, the addition of studies in environmental education and technology indicates recent trends and extends the problems and issues. The significant changes which have taken place in the world during the past three or four decades, the opportunities and the problems created as a consequence of these developments, and the new knowledge and the new techologies for processing such knowledge, have all had an impact on the curriculum and teaching of science, mathematics, and related areas. Even before Sputnik in 1957, there had been a concern for the identification and development of America's resources of specialized talent in science, mathematics, and engineering; and worries about enrollments, achievement, teachers and teaching, and pursuit of advanced training (Wolfle, 1954). Sputnik inspired frenetic efforts to catch up and surpass the Russians by upgrading curricula, improving the quality of teachers and teaching, providing counseling and financial aid to those who would enter the fields of science and engineering. These efforts have fallen off in the intervening years although from time to time they have been revived. The introduction of the "new mathematics" in the 1960s was followed by considerable debate, especially as mathematic achievement declined and the need for remediation increased. Were the mathematicians and educators who created the new curricula so wrong? Is the question one of more mathematics or of a different kind of mathematics? If all students should have 12 years of mathematics as Adler (1982) and others advocate, what should be the nature of that mathematics? How do the introduction and availability of calculators and computers affect mathematics instruction?

The "new" curricula in science have also experienced an uneven history. They have focused on science and technology content and processes differently from the traditional treatments. Ecology, food production, health, space, expendible resources, and a variety of other persistent societal problems have become the organizing bases for science programs. Some states have introduced separate courses in technology. In their chapter, Howe et al. observe that "most curricula do not reflect the present state of science and mathematics, the 'information age,' cognitive research on learning and instruction, and the effective use of technology as it relates to the curriculum." Interdisciplinary studies even within the areas of science and mathematics are scarce. Reformers frequently point out that American children do not do particularly well on cross-national studies of science and mathematics achievement. The curriculum patterns--e.g., studying physics or biology over a period of years rather than a single year, or the amount of practical or laboratory work—found in many other countries differ from those common in the United States. If implemented (which seems highly unlikely in light of the time which has elapsed since the proposals were made), would the plan of action proposed by the National Science Board Commission (1983) "for improving mathematics, science and technology education for all American elementary and secondary students so that their achievement is the best in the world by 1995" (p. i) achieve that goal? Are its proposals which call for "sweeping and drastic change: in the breadth of student participation, in our methods and quality of teaching, in the preparation and motivation of our children, in the content of courses, and in the standards of achievement" (pp. v-vi) simply the rhetoric of reform advocates or should they be taken seriously by educational planners?

Language

America, a nation with significant diversity in native languages other than English, seems to be notoriously poor in the teaching and learning of foreign languages. Intermittently, there has been a concern about the nation's inadequacies in the area of foreign languages. Sputnik gave a push to foreign language instruction, and foreign language teaching in the elementary school (FLES) became popular in addition to drives to improve instruction at the secondary levels. A minimum of three years of study of a foreign language for college-bound students was one of Conant's (1959) recommendations. Language laboratories proliferated schools at one point only to go the way of much technology after a period of time.

While there has been concern about the quality of teaching and learning and the size of enrollments, there have been two parallel developments that have had or should have had an impact on language instruction. One of these developments has been the large number of students entering schools for whom English is not the native language and who have only limited English fluency, if any. This has been the impetus for the bilingual education, which has in recent years become increasingly controversial, even to the point where there have been drives to make English the "official language" and to eliminate or reduce bilingual programs. The second is widespread instruction programs in the child's native language in settings other than public schools, sponsored by religious or ethnic groups (e.g., Jewish, Japanese, Chinese, Greek, Korean, Vietnamese, etc.). Thousands of children and youth are taught languages other than English in these settings but their language proficiency is seldom acknowledged by the school systems. When educators discuss the teaching of foreign languages, teaching of English as a second language (TESOL), or bilingual education, usually they focus on only those languages and that instruction which takes place in the school's program.

The major argument usually advanced for foreign language teaching is the one Clark refers to in his chapter:

> Proficiency in foreign languages is crucial to the United States' political as well as economic ties with the rest of the world...it is now a vital practical endeavor for every American student whose goal is the effective use of foreign language in real-life situations.

A number of issues have been posed for educational planners. Which students have or should have as a goal "the effective use of foreign languages in real-life situations?" What kinds of real-life situations? Those who will be engaged in international economic ventures or those who will be involved in business or other activities in settings locally where languages other than English is spoken? Which languages? Is second language proficiency in general the goal or is the goal only language proficiency in a second language with practical use? A few years ago, Russian was the "prestige" language to be learned; since then, Chinese and Japanese have risen in prestige and importance. In real-life situations, Spanish is probably the dominant language; should it, therefore, be the second language taught?

Bilingual education and teaching English as a second language have become significant components of compensatory education programs, especially as large numbers of youngsters, children of legal and illegal immigrants, enter school with limited or no English proficiency. While several reform reports stressed the importance of learning English, the Twentieth Century Fund report (1983) was perhaps the most direct in advocating that federal government declare the development of literacy in English language as the most important objective of education, and recommending the bilingual education funds be used instead "to teach non-English-speaking children how to speak, read, and write English" (p. 12). The significance of being literate in English in order to succeed in America is not seriously questioned by any of the proponents or opponents of bilingual education. For some, however, it is paradoxical that there should be concern about second/foreign language learning on the one hand, but unwillingness to recognize the validity of sutdents' native language proficiency. For others, the ignoring of research regarding the significance of the mother tongue in language acquisition is troublesome. Thus, it is of interest to find that language educators and linguisticians are becoming increasingly involved in content-based English language instruction, the teaching of English through the language of subject matter content, particularly science, mathematics, and social studies.

In every other subject area--e.g., the arts, health and physical education, home economics/family life education--there are basic curriculum issues. The "back to the basics" movement and the mandating of a common core curriculum and increased requirements have raised serious questions about the significance of "non-core" studies and have often placed limitations on their availability even as optional studies. There are, as noted above, significant issues which have to do with uniformity and diversity regarding subjects to be studied and the content and processes within those subject areas.

Vocational and Career Education

Certainly since the passage of the Smith-Hughes Act of 1917, vocational education has become an integral and firmly established part of secondary education. Nevertheless, it seems to have been continuously enmeshed in controversy regarding its validity and effectiveness. The Vocational Education Act of 1963 represented a major federal effort to expand and improve vocational education. In the early 1970s, the federal government sponsored a major project in the area of career education which supposedly encompassed vocational education but was intended to include much more. The need for an effective education-work policy was one of the significant themes of the reform reports of the 1970s. But, vocational education did not fare very well in the reform reports of the 1980s. For many, vocational education remained an unfulfilled promise. For others, it was not just a failed dream but a positive act of discrimination for many students who participated in such programs.

As Boyer (1983) pointed out, a number of factors cast doubt on the value of vocational education including a tenuous link to job opportunities ("job prospects for graduates of vocational programs are not much better, overall, than they are for students in nonspecialized curriculum," p. 12), the programs lack up-to-date and adequate resources, educators are unable to keep up with shifting labor practices, and, perhaps most important, vocational students are short-changed academically. Boyer's proposal, unlike some of the other reformers of the 1980s, was not to abolish vocational courses and programs but rather to eliminate "discriminatory labels and a tracking pattern that assume some students need no further education and that cut off their options. We would also eliminate the narrow 'marketable' skills courses that have little intellectual substance, courses that give students 'hands-on' experience while denying them a decent education" (p. 127)

Tracking and ability grouping have been the focus of considerable controversy for the last 70 years or so. Several of the recent reformers (e.g., Adler, 1982; Boyer, 1983; and Goodlad, 1983) have condemned tracking--the practice of placing students into academic, vocational, or general programs--as providing a second-class education for those not in the academic track, depriving them of equal access to knowledge. Their recommendation is to abolish the three-track system and provide instead for, as Goodlad put it, "a common core of studies from which students cannot escape through electives" (p. 297).

It was against this background that The National Commission on Secondary Vocational Education was formed in January 1984 to undertake a study on the assumption that "recent national study reports have not adequately dealt with the role of secondary vocational education" (p. vii). Its report, The Unfinished Agenda: The Role of Vocational Education in the High School (1985), was seen as filling "the gap left by other educational commissions in the interest of achieving a more balanced perspective on secondary school reform" (p. vii). Vocational education, the report asserted "is both a body of knowledge and an educational process, but the educational process has not received the degree of attention it deserves. Vocational education's potential to respond to diverse learning styles has been underutilized" (p. 4). The Commission identified and examined "existing problem areas" and made a number of recommendations, some of which dealt with access to vocational education, equity of educational opportunity, improvements in the content of vocational courses and development of an integrated curriculum, upgraded teacher recruitment and preparation, and more relevant standards and accountability.

Whether The Unfinished Agenda is indeed "a new vision for the critical role of vocational education in the secondary schools" which "should produce changes and improvements toward the end that the diverse needs of American youth for improved learning and career development opportunities are fulfilled" (p. vi) is debatable but it is an effort to deal with many significant issues concerning the role and function of vocational education. Vocational educators argue for the importance of vocational courses and career education for a sizable portion of the high school population. Is there a career-related curriculum which should be part of the common core of studies for all students? How important is vocational education in keeping youngsters from dropping out of school? Are vocational programs without "intellectual substance" as some of its critics claim? Do courses which give students hands-on experience deprive them of a "decent education" or are such courses the means for providing a relevant education? Is it possible for schools to deal adequately with the changing workplace and the development of new technologies? When he introduced the concept of career education in 1971, the then-U.S. Commissioner of Education, Sidney Marland, Jr., asserted that all education should be career education and that career education should be an integral part of all general education. Fifteen years of career education curriculum development has followed. How should career education be conceived in the light of the criticisms and recommendations of the reformers?

Adult Literacy

As Miller and Imel point out in Chapter I, "Adult illiteracy is a complex, costly social problem. Each year, an estimated 2.3 million persons join the existing pool of those 27 million adults who are functionally illiterate." How is this possible in one of the world's most developed nations? However functional illiteracy is defined or conceived, it represents a significant problem for illiterate individuals and society at large. What can schools do to upgrade student literacy and thus prevent adult illiteracy? Are the volunteer programs which are intermittently organized an effective means for combatting adult illiteracy? What can research contribute to an understanding of adult learners which can be used to prevent or alleviate illiteracy?

Teachers and Teaching

In its findings regarding teachers and teaching, the National Commission on Excellence in Education (1983) reported "that not enough of the academically able students are being attracted to teaching; that teacher preparation programs need substantial improvement; that the professional working life of teachers is on the whole unacceptable and that a serious shortage exists in key fields" (p.22). In retrospect, these were some of the kinder observations about the quality of teachers and teaching made by the reformers of the 1980s. The Commission included seven recommendations aimed at improving the preparation of teachers and making "teaching a more rewarding and respected profession" (p. 30). These recommendations, which deal with selection and preparation of teachers, inducements for recruiting more able students into teaching, inservice continuing education for teachers, appropriate compensation, career ladders, master teachers, and employment of qualified individuals without pedagogical experience, have the the focus of many state legislative activities.

Two important reports have been issued recently, both of which have been widely discussed and debated: a report by a group of deans of schools of education called the Holmes Group (1985) titled Tommorow's Teachers, and another by a Task Force of the Carnegie Forum on Education and the Economy (1986) titled A Nation Prepared: Teachers for the 21st Century. The Holmes Group set five major goals for its members: (1) To strengthen the liberal arts foundation and "make the education of teachers intellectually sound"; (2) "To recognize differences in knowledge, skill, and commitment among teachers" through changing the structure of the teaching profession; (3) "To create honest standards of entry into the profession of teaching"; (4) "To connect schools of education with schools"; and (5) "To make schools better places in which teachers can work and learn" (Murray, 1986, pp. 30-31). Probably its two most controversial recommendations are (1) the removal of professional studies from the undergraduate curriculum and placing them entirely at the graduate level, and (2) eliminating the undergraduate major in education.

As those familiar with the history of teacher education know, these are hardly new proposals and their most significant themes are ones which have recurred certainly since the Carnegie Report in 1920. For example, the issue of the balance between the general/liberal arts education and the professional education studies in the preparation of teachers--what Borrowman (1977) called the "liberal" and "technical"--has regularly surfaced for decades. What is new is the packaging of the proposals and the strategies for getting them implemented, capitalizing on the current reform reports' depiction of the poor quality of teachers and teacher education as a central cause for the current crises in education. Since 1983, governors, state legislatures, and state education departments have been busily engaged in reforming teacher education programs (both preservice and inservice), teacher certification, career ladders, merit pay, teacher salaries, and other elements of teaching.

In Chapter XIV, Ashburn raises three crucial questions about teacher preparation. What characterizes competent teachers? What is the curriculum for developing competent beginning teachers? How is competence of teachers measured? These are perennial issues concerning teacher preparation although there has been an increase in the intensity with which they have been studied in recent years. The Holmes Group and Carnegie Forum reports make recommendations which are intended to deal at least in part with these issues.

The Carnegie Forum report focuses on the workplace in relation to teacher education for, as Ashburn puts it, "few individuals with the capacity for competence will want to work in a setting which does not appreciate, support, or allow competence." In Chapter IV, Ellis et al. examine two related issues: (1) teacher selection and the problems of attracting achievers and leaders into the profession, and (2) enhancing school effectiveness through collegial observation and feedback. They argue the "theme common to both issues is that the key to attracting and retaining capable people to teaching lies in transformation of teachers' work environment--replacing the bureaucratic model of schooling with the professional model" (p. 1).

There are many "players"--state agencies, colleges and universities, boards of education, unions and professional organizations, community organizations, etc.--involved in improving school effectiveness by improving the recruitment, selection, education, induction, retention, and continuing education of staffs. Progress toward resolving the many issues concerned with upgrading the quality of teachers and of teaching will depend on the strategies used to involve these groups in recognizing and making decisions concerning the issues.

Special Education

Disadvantaged Students. One of the most significant pieces of legislation affecting special education was passage in 1975 of P.L. 94-142, The Education of All Handicapped Children Act, requiring that all handicapped children between ages 3-18 be provided with an appropriate education in a least restrictive environment. The requirements that whenever possible special education students be "mainstreamed" (i.e., placed within regular classrooms for as much of their education as possible) and that each special education student be provided with a cooperatively developed individualized education plan (IEP) have raised a number of issues regarding their implementation.

A significant issue involves the designation of children for categorical special education programs. Disadvantaged children tend to be overrepresented in such programs. Poor children, children from racial and ethnic minorities, and children with limited or no English are more likely to have learning problems and, as a consequence, be referred to various special education programs rather than provided for in the regular classroom.

The issue also involves the relationship between special education and regular education, whether they are separate and distinct parts of a dual service delivery system or components of a single education system. There are those who worry that regular education teachers lack the training and professional insights to provide adequately for special education students within their classrooms. Others argue that individualization of instruction is essential in all educational settings, and that much of teaching of special education students should take place in the less restrictive environment of the regular classroom with only special needs of such students provided in separate settings.

Other issues in the area of special education deal with the nature of appropriate educational and developmental experiences for at-risk children under age three and with the transition of special education students from secondary school to work. The at-risk infants pose special problems regarding appropriate interventions and coordination with other agencies. The issues concerned with the transition of special education students from school to work are particularly complex since they involve employers, changes in labor force needs, competition for scarce jobs, etc.

The reform reports have had relatively little to say about special education. The stress on excellence in education, with less than adequate attention to equity issues, results in special education students "not [being] considered worthy or needy of educational attention." Possibly this position is due to the reformers' perception that special education is "a separate, parallel enterprise that is only distantly related to general education" (Lilly, 1987, p. 325). Shephard (1987) suggests that the reformers "ignored special education because attention to the educational needs of a low-achieving group runs counter to the new emphasis on excellence and higher standards.... Higher standards for all students will exaggerate the tendency to refer difficult children to special education" (p. 320).

Gifted Students

With the emphasis of the reformers on "excellence in education," one would have expected that the gifted would receive special attention but, in fact, explicit attention to this population is minimal. There seems to be consensus that the gifted are exceptional, but beyond this, there is less agreement than might be expected. Although gifted education is often associated with special education, the gifted do not share in the same kind of financial or policy support as the handicapped. There are a variety of issues involved in all aspects of gifted education--conception and definition of giftedness, identification procedures, provision of appropriate differentiated curriculum, filling of counselling needs, selection and education of teachers of the gifted, provision of adequate learning environments, etc. There are continuing debates about the issues of appropriateness of acceleration versus enrichment, special classes and programs vis-a-vis instructional modifications within the regular classroom, whether such provisions contribute to elitism, how to deal with underachievement, what constitutes a balance between the cognitive and affective development of the gifted, etc. While gifted and talented students are often perceived as "precious natural resources," efforts to provide them with special programs, opportunities, and resources for them have waxed and waned in cycles over the years.

Urban and Minority Education

Almost every issue of concern to American education is present in intense form in the vortex of urban education. Urban education does not consist only of disadvantaged students, but it is the education of those students which causes the greatest concern. While Title I of the Elementary and Secondary Education Act of 1965 (replaced by Chapter I of the Education Consolidation and Improvement Act in 1981) was not limited to urban schools, it was in those schools that the largest concentrations of poor and minority students were found. It is in those schools where the "effective schooling" studies were done: inquiries into the functioning of schools in which achievement exceeded the predicted levels.

There are a host of issues concerned with various aspects of what has become known as "compensatory education." What should be the basis of selection of students for programs and service--poverty or poor academic achievement or both? What should be the focus of instructional services? What are the consequences of pull-out programs on the overall development and achievement of disadvantaged students? Should programs and services be concentrated on schools with high poverty levels or poor achievement? Are there optimal curricular or instructional strategies available to guide planners? Can we teach thinking and conceptual skills to disadvantaged youngsters as generic skills? Does research provide clear guidance regarding instructional strategies to be used with low-achieving students? To what extent should cultural, ethnic, and socioeconomic diversity be taken into account in designing instruction and curriculum? Are there special counseling needs for disadvantaged students? How should Chapter I programs be integrated with the remainder of the school's programs? Some 15 years ago, Passow (1971) wrote: "What the crisis in urban education has done is to stimulate a total rethinking of the educative process--the goals, the means, the resources, the strategies, the relationships. The 'tinkering approach' having proved less than adequate, the 'do something, try harder' stance having failed, we may now be ready for more comprehensive reforms based on sound research, theory, and experience." (p. 40). In the intervening years, "more comprehensive reforms" have not yet materialized so that the issues concerning urban education continue.

From the range of available issues, Flaxman and Riehl, in Chapter XVI, identify three which are significant concerns for urban educators: (1) preventing school dropouts, (2) improving secondary education for Hispanic students, and (3) attracting and retaining high quality teachers for urban schools. They indicate how these issues are not limited to urban schools but are more intense and critical in those settings.

The school dropout problem is, of course, not a new concern but one which has taken on new significance in terms of its consequences. Recent research has shifted from study of the characteristics and behaviors of dropouts to study of the school context and how it interacts with student variables to affect dropping out. Vocational and general tracks have apparently not contributed to keeping students in schools to the extent that it was thought they did. If low academic achievement and behavior problems in school are the most significant predictors of dropping out, what school actions will raise achievement and reduce behavior problems? Can potential dropouts be identified and early interventions provided them? To what extent are school dropouts actually school pushouts? What programs will help students return to school and become involved in programs and opportunities sufficiently different from those which helped drive the student out of school in the first place? What effect will the drive for educational excellence, increasing graduation requirements, and raising standards have on the dropout rate? Will it, as some reformers argue, raise school achievement and curtail dropping out?

The academic achievement, high school graduation, and college entrance rates of Hispanic students are among the lowest, and the dropout rate is among the highest of any group. Enrolled mainly in vocational and general programs, only a fraction of those Hispanic students who do graduate are apparently academically prepared for higher education. Many Hispanic students have only limited English proficiency. Urban schools seem unable to meet the needs of Hispanic students and they perceive the curriculum as irrelevant. The special counseling needs of Hispanic students are often not met; they often receive neither academic nor career guidance. Although many Hispanic youth work during high school in order to help their families, this work experience is neither recognized nor integrated into the students' programs. Their vocational education experiences appear to be of dubious value. Thus, a large majority of Hispanic student are at-risk for dropping out. How can schools be reorganized to serve Hispanic students better? What kinds of curriculum modifications are needed? Will mixed ability groupings in small, diverse academic and support units improve the academic achievement and self-esteem of Hispanic students? Will educational alternative programs help alleviate or exacerbate the problems of Hispanic students? Of what value is bilingual education to high school Hispanic students?

Attracting and retaining a high quality urban teaching force is part of the large problem of improving the quality of teaching. Flaxman and Riehl in Chapter XVI suggest that the quality of urban teaching could be improved by better preservice programs, better recruitment practices, and better work conditions so that competent teachers will have a better chance to succeed with urban students. Will the proposals for reforming teacher education--such as those of the Holmes Group or the Carnegie Forum--help the urban teaching force, or will they make it even more difficult to recruit and retain a quality teaching force? The issues of attracting and educating minority teachers have not been dealt with adequately in most of the reform proposals. Nor have the special skills and competencies needed for success with urban children and youth been clearly defined. What kinds of support services are required to reduce teacher stress, prevent teacher burnout and give them a chance of success with the at-risk student in the urban setting?

In some areas, large numbers of American Indians are enrolled in urban schools and are part of the culturally diverse pupil populations. American Indians and Alaska Natives have the highest dropout rate of any ethnic group and the achievement gap between their performance and that of white students widens as the students progress through school. The separation rate of American Indian families is higher than the rest of the population and Indian child welfare has become a matter of serious concern. A long history of discrimination suffered by American Indians seems to have contributed to their children being among those students most seriously at-risk.

The educational condition of Mexican American children, part of America's fast-growing Hispanic minority, is not much different from that of the American Indians with respect to low academic performance, low number of school years completed, high dropout rate, and high rates of illiteracy. They tend to be enrolled in over-crowded, poorly equipped schools which may or may not be in urban areas. Because of housing patterns, the schools have minority enrollments of more than 50 percent. Many of the Mexican Americans have limited English proficiency. In high schools, they are generally found in general or vocational programs, seldom in academic tracks. Mexican-American enrollments in higher education are among the lowest among minorities.

A third disadvantaged group, which often overlaps with minority status as well, are the children of migrant worker families. With a high rate of transiency, migrant children have serious schooling and related problems. While they have many problems in common with urban student populations, each of these disadvantaged groups has cultural or ethnic characteristics which contribute to special needs. Many of the issues--how to raise school performance, reduce illiteracy, cut the dropout rate, increase college going, and generally enable these groups to enter the socioeconomic mainstream--are similar to those of urban populations.

Education and Information Technology

From time to time, a new medium is introduced which, its advocates believe, will surely revolutionize education. Presently, it is microcomputers but, as Ely notes in Chapter VIII, "Some of the same patterns were evident when educational radio, silent and sound motion pictures, slides and filmstrips, overhead projectors, language laboratories, and programmed instruction were introduced to the educational establishment" (p. 2).

The National Science Board's Commission (1983) observed that the United States, which had "dramatically and boldly led the world into the age of technology," was now failing to educate its children for the coming decades" (p. xii). In its report, Educating Americans for the 21st Century, the Commission links mathematics, science, and technology as basic subjects to be studied by all students: "Students must be prepared to understand technological innovation, the productivity of technology, the impact of products on technology, and the need for critical evaluation of societal matters involving the consequences of technology" (p. 44). The Commission also noted that: "Computers are revolutionizing many areas of our lives; they may well do the same for education" (p. xii). In its discussion of new technology currently available to educators, the Commission included computers, educational television, computer-based telecommunications, videodisc systems, and robotics.

Thus there are two aspects of technology of interest to educators--technology as a subject to be studied (e.g., one-half year of computer science is one of the National Commission on Excellence in Education's Five New Basics) and technology as an instructional resource. Boyer (1983) talks about (1) learning about computers, (2) learning with computers, and (3) learning from computers.

Whether the focus is on technology as subject matter content or technology as an instructional resource, there are a number of issues which must be confronted. If, as the National Commission on Excellence in Education (1983) recommends, students should "understand the world of computers, electronics, and related technologies" (p. 26), of what does that world consist? Should the study of technology be required for all? Should technology be taught as a separate course or set of courses, or should it be part of other academic or vocational subjects? With respect to technology as an instructional resource, what are appropriate uses? Will high quality software be available for all intended uses? What new skills are required for teachers to use educational technology appropriately and effectively? How can equity be assured in the access to new technology so that the gap between the advantaged and disadvantaged does not widen? Will technology be used to customize and individualize instruction or simply to facilitate instructional management without differentiation? Some predictions foresee greater linkages between technology at home and that in the classrooms--particularly videocassettes, cable television, and computers. Will these occur and how will they they affect teaching and learning? As Ely cautions in Chapter VIII, technology relates to all fields and disciplines: "When technology becomes an issue in itself, we should recycle our concerns back to the beginning by asking, 'What is it we want to do? Who are the learners? How will we know when we are successful?'"

Testing, Measurement and Evaluation

Coupled with the proposal of most reform groups to raise standards is a recommendation for more and more frequent testing in order to establish greater accountability for students and teachers. In addition, coupled with the proposals to get better teachers is the recommendation for more testing of teachers at all stages of their preparation and certification.

State after state has responded with mandates for minimum competency testing at more and more grades. A variety of issues are raised by this trend. Are testing programs driving the curriculum? Do the tests have content, curricular, and instructional validity? Do the tests measure knowledge acquisition without assessing higher order thinking skills? Do the tests really contribute to raising standards? To what extent, if any, do the minimum competencies become perceived as the maximum competencies? Do the minimum competency tests discriminate against specific racial, ethnic, or socioeconomic groups? Do testing programs contribute to the dropout rate?

Testing is used for a variety of selection purposes--e.g., to select students for various grouping and tracks, for remedial and enrichment programs, or for counseling. A number of districts, however, have barred the use of group intelligence tests since they are considered discriminatory against racial or ethnic minorities. Other districts prohibit the use of tests of personality, values, critical thinking, and other affective areas. Are such tests discriminatory or is it the purposes and ways they are used which warrant questioning their value and/or validity? Do we know enough about the assessment of individual differences to provide differentiated programs and select youngsters for them?

In the wake of the reform reports, more and more states are testing teachers for initial certification and a few are testing teachers already in service. The most widely used test is the National Teachers Examination (NTE), although several states are developing their own tests. Two areas of knowledge are usually tested--general and professional. What general knowledge and what professional knowledge should be included? A basic issue is whether the tests, either the NTE or state-developed, are related to success in the classroom; is there any relationship to a score on the NTE and the individual's teaching competence? Does the test indicate at least minimal teaching competence? Should a paper-and-pencil test replace evaluations based on observed performance in determining whether to continue the appointment of teachers already in service?

Guidance and Counseling

According to Walz in Chapter II, there has been a recent resurgence of interest in and demand for counseling services, much of it in the areas of mental health, family counseling, and adult counseling. Most of the counseling and guidance services still take place in school and colleges, and deal with personal, educational/academic, and vocational/career counseling. Over the years, there has been continuing controversy concerning the value and effectiveness of such counseling, whether populations are better served by individual or group counseling, whether those individuals and groups most in need of such services are receiving them, and whether counselors have the skills and competence to meet their clients' needs.

A very sizeable group--possibly as many as 2.5 million youths, according to Walz in Chapter II--can be considered "at risk of being alienated from school, society, and work." The bases for considering youth at-risk are many and include suicide, pregnancy, drug and alcohol abuse, chronic truancy, juvenile delinquency, and unemployment. When academic underachievement and school discipline problems are added, the at-risk population becomes staggering. To whom will youngsters turn for assistance and support--counselors, peers, teachers, families, other agencies? Do counselors really play a significant role in assisting at-risk students? Counselors have been accused of discriminating, consciously or unconsciously, against minority youth; is there a basis for these charges? The traditional approach to vocational/career guidance has shifted with the growth of theory regarding career development; are counselors able and do they have the resources to provide effective career guidance to all students? Should various populations such as minorities, women, handicapped, or older adults, receive priority delivery of guidance services, especially career guidance? How effective are the new approaches to career guidance--self-managed, networking, group counseling, computers, systems designs?

Higher Education

The reform reports of the 1980s, aimed primarily at the high school, began to move on to higher education, raising a whole series of questions about the roles and programs of colleges and universities which are as comprehensive, varied and inclusive as those for elementary and secondary education. Included among these issues are questions about the philosophy and purpose of higher education in America today; the curriculum (how much should be liberal arts/ general education-based and how much career oriented/professional studies-based); appropriate standards; who should be admitted (e.g., should greater efforts be made to attract and retain minority and "non-traditional" students); the distribution of scarce resources; the development of non-traditional programs; staffing patterns (full- and part-time; traditional and non-traditional); faculty assessment (reappointment, promotion, and tenure); balance between teaching, research, and service; relationships with corporations, government, and industry); provision for at-risk students; etc.

Many of these same issues apply to the two-year community colleges as well. The purposes and functions of community college have varied. They have included providing occupational preparation for careers requiring less than a baccalaureate education, the first two years of a baccalaureate program, remedial studies, continuing education, adult education, and community cultural services. The shift which took place some 20 or so years ago from "junior college" to "community college" represented a fundamental change in goals and purposes. Institutions were no longer simply two-year versions of four-year institutions, catering to academically weaker students or ones who wished to start higher education nearer to home. Instead, community colleges had a clear purpose of their own for a constituency which was quite distinct.

Community colleges have traditionally been "open door" insitutions and, in some states, are perceived as extensions of the common school without the compulsory attendance requirement. This open access policy raises fundamental questions regarding the limits, if any, which should be set in admitting students. Should higher admission standards be set even if they appear to discriminate against some groups? Should functionally illiterate students be accepted in all or only some programs? Should remedial classes be provided and, if so, should they be compulsory? What bases should be used to assess the success of the community college? Should community colleges maintian the comprehensive curricula presently available, or should they set priorities among these various curricular as resources decline? What are appropriate bases for making decisions regarding priorities? How can the programs of community colleges and secondary schools be articulated so that both institutions would improve? Should the community college offer programs that serve a social cohesion function, leading students, as Cohen puts it in Chapter IX, "to a sense of their nation's heritage, shared understandings, community values, a common language."

Non-school Education Agencies

Education and socialization take place in a variety of settings other than schools--families, religious institutions, libraries, museums, youth groups, the media, etc. As the National Science Board's Commission (1983) observed: "Much that affects the quality of formal education occurs outside the classroom and beyond the control of the school" (p. 59). While there is increasing activity involving the creation of partnerships between business-industry and the schools, these seem to deal primarily with securing financial and personnel support. There is relatively little attention being given specifically to the schools and education in non-school settings. (For an exception, see Fantini & Sinclair, 1985.) How can schools relate to and capitalize on the formal and informal learning opportunities which exist outside the classroom structure? The reformers of the 1970s put a heavy stress on community-based experiential learning which moved learning out of the classroom into the community, a step toward articulating learning opportunities with those of the non-school educative agencies.

Some Concluding Observations and Reflections

These personal observations and reflections on trends and issues in education are made some three years after the current wave of school reform was initiated. Educators, politicians, governmental agencies, community groups, corporations, and other groups are all involved in school reform and many of them are "taking credit" for having moved schools and colleges toward higher levels of excellence, usually defined in terms of higher test scores. Some comments on this perception seem in order.

1. Crises in education and calls for reform in American education seem to be perennial. Historical traditions must be brought to bear to understand better the current trends and issues. The problem with the ahistorical approach taken by many erstwhile reformers is that they may not correctly perceive the situation nor ask the right questions. In all of the reform reports of the 1980s there are scarcely any references to the reform reports of the 1970s which undertook similar analyses of the "ills of American education" but came to very different conclusions and recommendations scarely ten years apart.

2. As suggested at the outset, calls for reform may not match the conditions of schooling which need change at the moment. Although he made his own recommendations for improving American education, Goodlad (1983) described the current proposals for curriculum reform as follows:

> The "obvious" and "logical" solutions to the schools' curricular inadequacies being bandied about today are those that were most frequently bandied about yesterday and the day before that. Essentially, they involve a "get tough" approach combined with a dose of elitism. Course requirements in basic subjects are to be extended; textbooks are to become "harder," with less watering down to the lowest common denominators of student abilities. (p. 29)

Noting that reformers are "quick to assume that declining high school test scores can be attributed to shortcomings in the educational system," Peterson (1983) suggests that other factors may be at work "such as increased use of drugs and alcohol, a rise in the percentage of students who live in single parent households, and declining employment opportunities--and no one has been able to establish that changes in the classroom, independent of changes in the larger society, are to blame for drops in test results" (p. 4). Nor, it might be added, has it been convincingly established that the drop in test results is the critical cause in America's declining industrial and commercial fortunes.

3. For the past two decades or so, the change process has been systematically studied. It is clear that there are limits on the changes which legislative mandates, commission recommendations, and other external agencies and groups can effect. Ultimately, changes in curriculum and instruction depend on changes in people. A major issue which tends to be ignored by reformers other than by exhortation and directive is the question of how to bring about real changes in curriculum and teaching, changes which will enable us to achieve the twin goals of equity and excellence more meaningfully than would be manifested by higher test scores.

4. Although there is considerable rhetoric regarding the need for educating our children and youth for the future (e.g., Educating Americans for the 21st Century), we seem not to be clear about what kind of future. In addition to the questions we have been asking, perhaps there are some others. For example, toward what goals and ends should our education be directed if we are to prepare our children for the future? Toward what knowledge, skills, understandings, values, insights, self-concepts? Will our nation be at less risk if we increase the number of courses in science, mathematics, and technology our students take, or must the curriculum provide a qualitatively different kind of mathematics and science, one which has moral and aesthetic as well knowledge dimensions? How do we educate creative, productive individuals who are also concerned with ethics, morality, and social responsibility?

Although we find it difficult to comprehend the real meaning of the "knowledge explosion," we are constantly informed that such an explosion is occurring. How do we deal with this knowledge explosion in the curriculum, other than by telling students that it is happening? What criteria do we use to select content and processes for inclusion in the curriculum from this exponentially increasing knowledge base? Should we teach youngsters about the nature of knowledge? About theories of knowledge? About how knowledge is produced?

In a world beset with problems--the possibility of nuclear annihilation, terrorism, widespread hunger and disease, environmental pollution, totalitarianism, disinformation, and daily and continuing crises of every kind--what kinds of curricular experiences will nuture consciousness, concern, personal responsibility, and commitment in our students so that they will not blindly ignore these threats to the survival of humankind and will use their talents toward the resolution of these problems?

How do we teach individuals the skills of cooperative behavior? What kind of education will help students to become issue-oriented, willing and able to understand the vital issues which individuals and societies face and to attempt to come to grips with them? What kind of an education will nourish the learning-how-to-learn skills, the higher order thinking skills, the creativity, the motivation needed by our youngsters to function in today's society and into the next century?

These personal observations and reflections on the trends and issues in American education suggest that it is not that we have been asking the wrong questions and confronting the wrong issues but rather that we might think of asking some additional ones. America needs intelligent, skilled, caring, compassionate, creative individuals not only to compete industrially with Japan, West Germany, or other nations, and to compete militarily with the U.S.S.R., but because our nation believes a society is not healthy unless each individual fulfills his/her own potential. Our educators need to ask whether our schools are really producing persons who can do so and what must be done to ensure this in the years ahead.

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SOME CURRENT ISSUES IN ADULT, CAREER, AND VOCATIONAL EDUCATION

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The fields of adult, career, and vocational education are broad and are currently facing a variety of issues. Four issues have been selected for review in this chapter. These issues revolve around these questions:

- What career-related curriculum should be incorporated into the new basics?
- What contributions can vocational and career education make to reducing the dropout rate?
- How can articulated secondary-postsecondary programs support quality occupational training?
- How can literacy programs increase the literacy rate among adult Americans?

Selection of these issues was difficult because of the diversity and breadth of the three scope areas covered by the ERIC Clearinghouse on Adult, Career, and Vocational Education. The final selection of issues was based on two criteria: representativeness and importance.

These questions reflect important issues at various educational levels ranging from kindergarten through adult education. The career-related curriculum focuses on elementary, middle school, and early high school curriculum that prepares students for the career and technological changes that they will confront throughout their lives. The issue of dropout reduction addresses a growing national concern for the need to support student retention by initiating early identification and prevention programs. The articulated secondary-postsecondary occupational training issue responds to the need to develop coordinated occupational training curricula that are efficient and nonduplicative and result in the achievement of higher-level technical skills. This area focuses on later secondary and postsecondary education. Finally, the educational needs of adults are a recognized national concern. Although adult learners vary in their educational goals, how to increase adult literacy levels stands out as a major concern. For this reason, adult literacy was selected as the fourth issue to be representative of a major adult education theme.

These issues also address important trends affecting education today, including the effects of a changing workplace on occupational and educational requirements, the growing concern for reaching disconnected youth and adults, and the current emphasis on educational excellence. Technology is being adopted widely and is making frequent career change a way of life.

An understanding of the principles of technology and of personal career planning concepts is becoming increasingly important for all students. The changing workplace is creating a demand for a higher number of technicians. For success it requires generalizable, nonspecific work skills. There is also a trend toward a higher number of less-than-baccalaureate-level jobs. This is creating an increased need for high-quality, efficient occupational training at the secondary and postsecondary levels.

The problem of disconnected youth and adults is becoming acute. These are youth and adults who have dropped out of high school, lack literacy skills, and consistently are either unemployed or employed in low-level, unstable, and low-paying jobs. A dual attack is needed to stabilize and reduce the number of disconnected youth and adults. At the public school level, dropout prevention programs are needed, while at the adult level literacy programs are needed.

Finally, the recent emphasis on excellence in education is resulting in major curriculum reform. Most states are adopting stricter graduation requirements and the curriculum is becoming more uniform for all students. This trend raises the issue of the role of career and vocational education in the new basics. Among the suggestions emerging are the adoption of a career/technology core as a basic curriculum area for all students and the granting of joint academic and vocational credit for carefully designed vocational education programs.

What Career-Related Curriculum Should Be Incorporated into the New Basics?

Should principles of technology and career be incorporated with the basic curriculum? Several writers suggest that they should. Boyer (1983), in the Carnegie report entitled High School: A Report on Secondary Education in America, suggests that a course on work and career should be one of the basics. The National Commission on Secondary Vocational Education (1984) states that vocational education in the secondary curriculum should include career guidance and exploration, general employability skills, broad concepts of work and family, and general and specific occupational skill training. The increasing influence of technology has prompted several writers (Daniels, Karmos, & Presley, 1985) to focus on the importance of pretechnical knowledge and skills that are of increased importance in the workplace and to individuals as they make a number of career changes over the life span.

Many of the recent commission reports on education emphasize the need for a solid educational foundation that will enable today's youth to adapt to an uncertain employment future. The rapid rates of technological change mean that much of the current work force will have to acquire new skills. In such a period of transition, it is difficult to know how to prepare young people and retrain adults for rewarding future employment (Lewis, Fraser, & Unger, 1984).

Although authorities agree that the economic shift will affect the types of available jobs, it is difficult to predict the exact nature of that change as well as how rapidly it will occur. Recent figures from the U.S. Department of Labor's Bureau of Statistics project rapid growth rates for the high-tech occupations, such as computer service technicians. However, the actual number of these high-tech occupations, compared to other occupations, will remain small. The largest number of new job openings will be created in low-skilled or service job categories such as building custodian, cashier, secretary, general office clerk, and sales clerk. When reviewing projections of future labor force requirements, a distinction should be made between the percentage of growth for an occupation and the numbers of new jobs created. During the remainder of the 1980s, most new jobs will not involve high levels of scientific or mathematical skills as high-tech industries are expected to account for only 17% of the new jobs created between 1982 and 1995 (Lewis et al., 1984).

Technology is having a profound impact on existing jobs. Microprocessors, laser use, and biotechnologies are influencing the workplace. How will their applications affect the skill levels required for various jobs? Two opposing views exist. The first is that the increased application of technology will increase job skill requirements. The second view is that the increased use of technology will de-skill or lower the job skill requirements, and there will be less need for a highly educated work force. There is evidence that both points of view are true. Technology will probably first raise but later lower the skills required of workers. Current evidence suggests that emerging technology is resulting in less emphasis on manipulative skills and greater emphasis on cognitive and analytical skills. For example, robots are replacing assemblers and operatives but are increasing the demand for technicians. However, as technology matures and becomes more user friendly, worker skill requirements are likely to decrease (Lewis et al., 1984; D. P. Meyer, 1985).

It is impossible to predict accurately which jobs will be available to an individual throughout a lifetime. How can education prepare individuals to meet such uncertain future labor market conditions? What are the implications of the changing workplace for the core curriculum? The predominant view regarding curriculum is that it should provide a strong general educational foundation that will prepare individuals to adapt to the many occupational and technical changes that they will encounter in the future. Several models of K-12 career-related curriculum are emerging. These models focus on two approaches. The first is to provide joint vocational and basic skills courses to support the application of concepts and to increase student motivation. The second focuses on the career/technology area as one of the basics important to all students.

The combined vocational/basic skills approach includes granting credit jointly to vocational and basic skills for vocational education courses and reinforcing basic skills through vocational education instruction. Cincinnati's Great Oaks Joint Vocational School District has a program that coordinates math and science instruction with vocational offerings in the areas of dental assistant training, chef's training, electronics, welding, and industrial maintenance. Working jointly, academic and vocational instructors have developed curriculum that delivers both occupational skills and basic skills in such areas as math, science, and communication (Migal, 1984).

In Virginia, students are allowed to take a sequence of vocational courses to fulfill the requirement for either a math or a science course. Students who complete a minimum of 300 hours of vocational instruction in the areas of agriculture, business, distribution, health occupations, occupational home economics, or trade and industrial education also receive a math or science credit toward graduation requirements (Brown, 1984).

The approach combining vocational and basic skills instruction that was developed by the Center for Occupational Research and Development recognizes the interrelationship between basic science and technology. The "Principles of Technology" program includes joint instruction in technical principles and concepts of science and mathematics. It also provides hands-on laboratory experiences to support the application of concepts and skills. The course includes 14 units focusing on the scientific principles that are the basis of current technological developments (Parnell, 1985).

Another cluster of programs addresses the importance of career and technology concepts as one of the basics needed by all students. These approaches focus on technological literacy, career planning skills, and nonspecific, generalizable work skills. Dyrenfurth (1984) has developed a technological literacy model consisting of three stages. First-order technological literacy helps individuals be aware of all technology. This level should be incorporated into existing elementary, junior high, and middle school curricula. Second-order technological literacy helps individuals be aware of and explore a subset of technologies of interest to them. This level can be supported by appropriate materials in middle and secondary school social studies, industrial arts, home economics, and practical arts curricula. Third-order technological literacy includes exploration, prespecialization, and preparation in a subset of technology. This would occur in both the secondary and postsecondary setting.

The state of New York has recently adopted a three-stage curriculum that combines career and technology competencies for all students. During the foundation stage, grades K through 8, all students obtain a common core of conceptual skills and knowledge related to personal, family, home, community, and work responsibilities. During this phase, seventh- and eighth-grade students are required to take one-unit courses in technology and in introduction to careers. During the 9th and 10th grades, the development phase, students are provided a broad spectrum of knowledge and skills generic to all areas of home/family and employment. Specialized occupational education, the concentration phase that prepares students for either employment or for postsecondary education, is delayed until the 11th and 12th grades. Thus, career options are kept open until students have thoroughly explored the full implications (Daggett, 1984).

Daniels et al. (1985) have proposed a pretechnical curriculum that includes three sets of skills. Generalizable skills and knowledge are those directly used in work performance. They are transferable across jobs and occupations, and are keys to success on the job and in the classroom. Examples include reasoning, communication, math, and technological and attitudinal skills. Transition skills and knowledge are needed to manage career and other life transitions. Examples include change management and decision-making skills. Problem-solving skills and knowledge are needed to be effective in interpersonal and group situations encountered in most work settings. These include interpersonal skills and the ability to understand human behavior. The importance of these skills in the changing workplace was verified by Pratzner and Russell (1984), who identified such transferable skills as problem-solving, interpersonal relations, group process, decision-making, planning, communication, and thinking/reasoning skills.

Future Directions

New demands in the workplace resulting from the increased application of technology have implications for the K-12 curriculum. Recent educational reforms have emphasized increased achievement in the basics. Current programs are supporting the effectiveness of combining vocational and basic skills instruction and incorporating career and technology concepts into the basic curriculum for all students.

There are several advantages to developing courses that carry joint credit for vocational and basic skills. Such courses provide an increased opportunity for the application of basic skills and concepts. Transfer of training can be increased as students use basic skills to solve vocationally oriented problems. Also, for unmotivated students, the active, hands-on instruction used in vocational education increases interest and motivation, thus supporting higher levels of achievement and retention. Successful programs that include vocational and basic skills instruction and credit require cooperative planning. Existing programs have been planned jointly by the academic and vocational staff, and often include team teaching. In the cases of New York and Virginia, the impetus for the establishment of joint curricula has come from the state level. The development of joint vocational and basic skills courses is not widespread at the present time. To support the increased development of quality programs, it is important to study more closely the planning processes used to develop successful arrangements and to disseminate information about successful models.

Technology is vital to our economic development. Although technology is closely related to and applies concepts from basic areas such as math and science, it constitutes a separate domain. Recent efforts to develop models of pretechnology and technology education suggest that technology is an important basic. More developmental work is needed in this area. First, existing pretechnology and technology curriculum models need to be tested to determine their quality and to identify the most effective ways of incorporating these areas into the existing curriculum. Current approaches include offering separate courses and combining with existing courses. Second, curriculum developers need to find effective ways to monitor technological developments and revise curriculum to include emerging concepts. This will require stronger linkages to business, research, and industrial settings in which technological development is occurring.

A final area includes the development of curriculum to teach generalizable career skills. Trends indicate that change is becoming a way of life. Today's youth will change occupations over seven times during their adult lives. What knowledge and skills best prepare youth to deal effectively with change? A set of general, nonoccupationally specific skills are being suggested. These include problem-solving, decision-making, interpersonal, and career-planning skills. Although some of these skills are taught in the existing curricula, it cannot be assumed that transfer of these skills to life decisions and occupational situations will occur automatically. Specific instructional activities are needed to support this transfer. The major need is to develop learning experiences that support transfer of skills and to determine effective models for providing this instruction. Existing models such as general career-related courses, infusion into existing curriculum, and career guidance programs need to be evaluated. Dissemination of effective approaches and coordination at the state level are also needed.

What Contributions Can Vocational and Career Education Make to Reducing the Dropout Rate?

A large number of youth are at risk (Education Commission of the States, 1985). They are more apt to drop out of school before high school graduation. Also, they are more likely than other adults to be unemployed and receive lower wages after they have left the secondary schools. About 700,000 students dropped out during 1984 and another 300,000 were chronically truant. In large cities the dropout rate runs over 40 percent. The dropout rates for the lower socioeconomic, black and Hispanic youth are much higher than dropout rates for high socioeconomic and white youth. Among dropouts, most female students drop out to have babies. Of the unwed teens who gave birth to 650,000 babies in 1984, many did not return to school.

Once they have left school, many young adults fail to find consistent employment. The unemployment rate of teenagers is three times higher than that of adults. More than 3 million young adults (ages 16 to 24) are looking for work and almost 400,000 are discouraged, thus no longer seeking employment. Current unemployment rates for black teens (40 percent) and Hispanic teens (24 percent) are higher than the 15 percent unemployment rate for white teens. Not all dropouts are at risk in later career and educational achievements. About 14 percent of males and 9 percent of females later enter General Educational Development (GED) programs.

The recent excellence reforms enacted in many states are a first step toward ensuring the quality of education and preparing youth for changing social and labor market conditions. For at-risk youth, however, reforms such as a uniform core curriculum, longer school day, more homework, and competency testing may result in increased dropping out rather than increased competence. Several groups are suggesting that preventive programs for at-risk youth are an important next step in the educational excellence reform process (Education Commission of the States, 1985). Programming to support quality education to retain at-risk youth can draw from existing dropout research and current exemplary programs that suggest program standards.

Research has focused on describing the characteristics of dropouts, understanding why youth decide to drop out, and describing the features of programs that reduce dropout rates (Batsche, McCarty, & Klitzke, 1984; Weber & Silvani-Lacey, 1983). Research on characteristics of dropouts has identified personal, family, social, and economic factors that characterize dropouts. There are two problems with the usefulness of this information for program development. First, few of the identified characteristics are factors over which the school has control. While a characteristic such as low self-esteem may be modified by the school, other characteristics such as socioeconomic status may not. Another problem with this research is that too often it focuses on the students at or near the school-leaving age. Descriptions of students at this point have little power to suggest early intervention strategies. Research will be most helpful when it studies the characteristics of later elementary or middle school students who subsequently drop out.

Other research has examined the decision process: why a student chooses to drop out (Batsche et al., 1984). One problem with this research is that students will often give socially acceptable reasons (e.g., need to work), rather than real causes (e.g., isolation or boredom). Decisions during the transition from middle school to high school are crucial, since they define motivation for the high school years. Fewer dropouts than school completers report having discussed their high school plans with a parent, "significant other," teacher, or counselor (Weber, 1986). They are more apt to report being "assigned to" rather than choosing their high school program, and are more likely to be in the general curriculum. When they are in vocational curriculum, they are more often enrolled in exploratory courses rather than a sequence of courses that provide job-specific training. Dropouts are more apt to be in work-study programs than is the general student population, but these experiences too often are not programmatic or linked to ongoing school efforts.

What role do career and vocational education play in retaining students in high school and motivating disconnected young adults to return to school? Career education, including career guidance and counseling, experience-based career education, and career-related classroom activities, has been shown to support several goals related to retention (Bonnet, 1979). Career education increases basic skills achievement, particularly in the application and long-term retention of skills. Students with low motivation to attend school have shown improvement in school attendance and retention after participating in career education experiences. Vocational students who have participated in career education are more likely to complete the vocational program they have selected. Finally, career education has consistently demonstrated effectiveness in increasing students' career planning skills.

Thus, students are better able to set personal, educational, and occupational goals that lend meaning and motivation to the high school experience.

Results of several studies support the importance of vocational education in dropout prevention (Mertens, Seitz, & Cox, 1982; Weber, 1986). These studies showed that vocational education enrollment was associated with school retention. In North Carolina, one-fourth of the students in a survey said that vocational education was the main reason why they stayed in school. In general, findings suggest that vocational education and work experience are powerful in supporting school retention but that they are most effective when combined with other program features. When determining the value of vocational education in dropout prevention, it is important to examine the quality of the vocational education experience. Casual exploration through vocational courses or work experience that is not related to learning goals are less effective than major concentration in a vocational program.

Young adults who have dropped out of school tend to have low basic skills levels that prevent them from entering work and education and training programs. Adult basic education (ABE) has developed programs to meet the needs of young adults. Through ABE programs, young adults obtain the basic skills needed to enter high school completion and vocational training programs and to obtain jobs. Of adult basic education students, 65% are in the 16- to 35-year-old age group; 53% have achieved less than a high school education. Research on the effects of ABE programs (Darkenwald & Valentine, 1984) shows that participants improve their self-concept, gain confidence in themselves, and achieve their personal educational goals.

Future Directions

Although career and vocational education programs have been shown to contribute to school retention, their overall impact can be improved by strengthening and modifying existing programs to better meet the needs of potential dropouts.

Early intervention has been stressed and general characteristics of dropouts have been identified. Procedures are needed to help local schools develop identification procedures that are based on local student information and consider multiple factors (Weber, 1986). After identifying who might drop out, effective, early intervention programs should be targeted to these identified youth.

The transition into high school is a point when students need to develop commitment and motivation for completing their high school program. They also need to believe that the high school program is relevant to adult roles that they will assume when they leave school. Intensive career education and exploration experiences can support the transition of dropout-prone students into high school. The experience should lead to the development of individualized plans that include educational goals, strategies to reduce barriers to the achievement of goals, and timelines for monitoring progress on these goals. Individualized planning approaches such as those used with handicapped students need to be adapted for use with dropout-prone students.

Characteristics of successful dropout prevention programs include administrative arrangements, teacher behavior and characteristics, student culture, and instructional design (Wehlage, 1983). Small programs with two to six teachers serving 25-60 students are most effective. Program staff have autonomy that allows teachers to assume authority and responsibility for solving problems related to the program. Teachers believe that all students can learn and that the teacher is responsible for ensuring learning. They see the student as a total person and relate to students in a caring way while setting high expectations and firm rules for the program. These teachers are also highly cooperative with each other.

Students in successful programs are cooperative rather than competitive. They view the program as a "family" and are willing to support each other. Successful programs have distinctive instructional features. Instruction is individualized and focuses on real-life problems. Experiential learning in community service, vocational, and outcome settings is stressed. These features of successful programs confirm the importance of considering multiple factors when designing programs and the need to disseminate successful program models nationally.

For vocational education to have optimal impact on school retention, potential dropouts need to participate in vocational education programs in a meaningful way. Schools need to take specific steps to increase enrollments and to ensure comprehensive rather than random, exploratory participation. These steps include helping students view vocational education as a viable educational option; conducting outreach and recruitment programs for dropout-prone students; and helping students identify, enter, and complete comprehensive vocational education programs that lead to occupational skills development.

Work-study activities can provide financial support for students and increase motivation for school achievement. However, if not carefully planned, work-study activities can have a negative effect (Weber, 1986). Work-study activities should include specific objectives, diverse experiences that are linked to the students' educational program, close ties between the employer and the school, and evaluation standards to review the quality of work-study activities.

How Can Articulated Secondary-Postsecondary Programs Support Quality Occupational Training?

The excellence movement has resulted in renewed interest in strengthening the secondary school curriculum to ensure higher levels of basic skills achievement. Parnell (1985) highlights the need for high school curriculum reforms to include carefully articulated secondary-postsecondary programs.

In early 1985, 40 states had increased high school graduation requirements, and 27 states had or were considering separate requirements for an advanced or college-preparatory diploma (Dyrenfurth, 1985). This trend will result in a more uniform curriculum for all students. This should help to change the previous trend for many students to follow a general curriculum in high school that neither prepared them for college attendance nor for less-than-baccalaureate-level occupational training. Between 1975 and 1981, 36% of high school students were in the academic track, 43% in the general track, and 19% in the vocational track (2% were unidentified).

However, a college-preparatory curriculum in which all students have similar educational experiences may not reflect the needs of students or of the occupational demand structure. Although there has been an increase in baccalaureate-degree holders, at least three of four public school students will not achieve this degree. The U.S. Department of Labor (1984) identified the 50 fastest-growing occupations. None of them are low-skill jobs and only two require a baccalaureate degree. Increased use of technology in most occupational areas is creating new demands for skill and knowledge. Although projections suggest that there will be relatively few high-tech jobs, most jobs will be influenced by technology. Parnell (1985) argues that training of technicians with a broad understanding of the principles as well as the applications of technology is needed to respond to the shifting workplace.

The articulated secondary-postsecondary, vocational-technical curriculum is an emerging response to the need to provide technical and basic skill excellence for the three out of four students who will receive less than a baccalaureate degree. Articulation is the process of developing and implementing coordinated curricula at the secondary and postsecondary levels. These articulated curricula provide courses of study that students begin during the high school years and complete by attending a community college or postsecondary technical school. They are carefully structured to avoid duplication of learning, to support the smooth transition from one level to the next, and to result in the achievement of higher-level technical competence.

Articulated programs can provide several benefits for both students and educational institutions (American Association of Community and Junior Colleges and American Vocational Association, 1984). These include reduced duplication of learning, more effective and efficient learning, improved program content and standards, and fuller use of existing program facilities and equipment. Articulated programs can help both secondary and postsecondary institutions respond to the need for excellence. At the high school level, programs combine basic skills and technical competence to improve the quality of vocational education offerings. These more rigorous programs that are closely linked to postsecondary education provide a more attractive option for students and can help support high school completion. Postsecondary institutions will also benefit by having larger enrollments of better prepared students.

Long et al. (1986) conducted a national survey of existing secondary-postsecondary program articulation efforts. They conclude that all articulated programs share the goal of saving students both time and money by avoiding duplication of learning. However, some programs move beyond these goals by teaching more advanced skills than can be delivered in unarticulated programs.

Time-shortened articulated programs that allow students to receive postsecondary credit for high school work can be considered as advanced placement programs. These programs vary in their complexity. In some cases, they are direct arrangements between the high school and the postsecondary school developed by a few people. In other cases, they involve comprehensive planning committees and administrative structures. Increasingly, the impetus for these agreements originates in state-level policy (Maryland State Board for Community Colleges, 1984).

A major need in articulated programs is an effective method of verifying learning at the high school level, and of evaluating those learning experiences or establishing postsecondary credit. Various approaches are used, including teacher recommendation, external testing, and competency-based curricula. Competency-based curricula are effective since the assessment of competencies taught and mastered is built into the curriculum. Time-shortened programs provide cost-effective, motivating, high-quality occupational training. These programs hold promise for improving the quality of occupational training for many occupational areas. However, in the light of the growing demand for "master technicians" (Parnell, 1985), there is an additional need, that articulated programs result in high-level skills and knowledge. Two promising approaches to articulated advanced-skills programs are the high school core technical curriculum and the vocational-technical 2 + 2 programs (Long et al., 1986).

The core curriculum provides intensive instruction in the principles of technology to help students develop the core knowledge base needed for postsecondary-level, high-technology training. The Center for Occupational Development has developed a "Principles of Technology" curriculum that covers principles of physics needed for advanced technical training in such programs as medical equipment technician and computer-aided design technician. Students who have taken the core technology curriculum at the high school level are able to bypass introductory courses and move to advanced levels upon postsecondary school entry. The core curriculum focuses on basic technical principles rather than specific skill training. High school students have the option of combining the core curriculum with other vocational education in high school or delaying specific skills training until the postsecondary level.

The vocational-technical 2 + 2 curriculum also focuses on developing advanced skills for high-tech occupations. These programs provide a comprehensive, four-year technical training program that is entered during the last two years of high school and completed at the end of two years of postsecondary training (Parnell, 1984). These 2 + 2 programs provide four years of study focusing on three major knowledge areas: basic skills (mathematics, science, communications, socioeconomics, and computer literacy), technical core skills (a set of knowledge and skills shared by a general occupational area), and specialty skills.

Future Directions

Projections indicate that secondary-postsecondary articulation arrangements will become more numerous and comprehensive in the future. Future efforts need to focus on guaranteeing relevant curriculum to meet student and labor market needs, developing state-level policies to support articulation, and developing and implementing local articulation plans.

When developing articulation agreements, the needs of students should be foremost. Higher unemployment rates are tied to lower educational attainment levels. Many employment opportunities require less than a baccalaureate degree but do require training that is relevant to changing job demands. School retention is a national concern and can be stimulated by the availability of training options that relate to career goals and are cost- and time-effective for students. While there is increasing demand for technicians, the major demand still clusters in other, more traditional occupational areas. Articulation plans that are based on student needs will include diverse options that provide for both time-reduced training and increased skill-level training. Programs also need to focus on such services as outreach, recruitment, counseling, and placement that help students set career goals, select appropriate educational options, complete articulated training, understand career ladders within their training area, and obtain job placement.

Although articulated programs have been developed locally without the impetus of state-level policy, the extensive emergence of local agreements will be facilitated by state policy. In some cases, state administrative arrangements have been a barrier to articulation. Often, different state agencies have jurisdiction over secondary and postsecondary education. Several options are available at the state level. Florida has a policy that permits high school students to enroll in a community college and receive both high school and college credit. Other states, California for one, have policies that encourage but do not mandate cooperation. A few states are developing policies that mandate cooperation. In Illinois, the State Board of Education and the Community College Board have proposed formal articulation agreements between secondary and postsecondary levels. These agreements must address four areas: (a) program alignment and continuity in a given occupational area; (b) transition of students from one level to another without undue delay or duplication of learning; (c) cooperation in use of equipment, facilities, and staff, when feasible; and (d) cooperation in ongoing evaluation and improvement of programs (Galloway & Washburn, 1985). An analysis of current state policy and the revision of policy to support articulation are needed to promote cost-effective, efficient secondary-postsecondary coordination.

While state policy can support or even mandate cooperative planning, its success rests at the local level. Long et al. (1986) found that local factors such as turf conflicts, faculty resistance, poor communication, and incompatible curriculum were greater barriers than external problems such as state-level policy. Case studies of successful programs led the authors to conclude that core elements of successful programs were (a) leadership and commitment from the top; (b) early faculty involvement; (c) relationships based on mutual respect and trust; (d) mutual benefits to all partners; (e) written articulation agreements; (f) open, clear, and frequent communications; (g) modest initial goals; (h) clearly defined responsibilities; (i) competency-based curricula; and (j) a common focus on mutual goals rather than on individual turf. These factors are supported by suggestions for local articulation provided by Parnell (1985). Local secondary and postsecondary schools need to recognize the benefits of articulation for both the institution and its students, to make major administrative commitment to the development of effective articulation, and to allocate resources to the development and implementation of these arrangements.

An increasing number of emerging articulation agreements support curriculum coordination between secondary and postsecondary institutions. These agreements improve the quality of vocational-technical education, create educational options that will support the availability of appropriately skilled workers to meet changing labor force demands, and provide viable educational options that can motivate youth to complete high school and postsecondary education. The directions described in this section strengthen the effectiveness of these articulated programs.

How Can Literacy Programs Increase the Literacy Rate Among Adult Americans?

Adult illiteracy is a complex, costly social problem. Each year, an estimated 2.3 million persons join the existing pool of those 27 million adults who are functionally illiterate. This number includes high school dropouts and "pushouts," legal and illegal immigrants, refugees, and others with limited English proficiency (U.S. Department of Education, n.d.). During the past three years, several national efforts have focused attention on the problem. These include:

- Announcement in September, 1983, by President Reagan of the Adult Literacy Initiative that is being carried out by the U.S. Department of Education.
- Formation of the Coalition for Literacy, an 11-member organization that works with the American Association of Advertising Agencies to implement a nationwide media campaign.
- Formation of the Business Council for Effective Literacy that is dedicated to helping generate greater corporate awareness of the functional illiteracy problem and encourage corporate support of local programs and planning in the field.
- Support of local adult literacy programs by B. Dalton Booksellers through funds made available from the Dayton Hudson Company.

As a result of these recent efforts, a number of aspects of adult literacy education have surfaced.

Individuals working in adult literacy education view it from different, and sometimes conflicting, perspectives. Several key areas associated with adult literacy education are the characteristics of illiterate adults, the use of volunteers in adult literacy programs, the impact of technology upon adult literacy, and the need for better linkages and communication within the field of adult literacy education.

Characteristics of Illiterate Adults

Lack of understanding of the characteristics of illiterate adults is a key area in literacy education, one that gives rise to a number of issues and problems. Research has tended to portray illiterate adults from a deficit perspective, embedded in a culture of poverty. Although illiterate adults may have a fully developed language system, the literature more frequently mentions that they fear failure in teaching-learning situations, have low self-esteem and self-confidence, and resist change. They may be characterized as inarticulate and unable to cope or think abstractly. A tone of mission and concern for the less fortunate (e.g., rehabilitating the malfunctioning adult into normal society) tends to dominate the deficit perspective (Fingeret, 1984).

A new picture of illiterate adults is beginning to emerge. Qualitative studies in which the adults themselves were provided opportunities to share their own perspectives give a more balanced and accurate view. Although they may lack formal schooling, many illiterate adults have educated themselves through their life experiences. This emerging portrait also reveals that many are frustrated with educators and programs designed to develop their literacy skills (Fingeret, 1984).

Intergenerational illiteracy is another concept associated with characteristics of illiterate adults. There is some evidence that illiteracy is cyclical. Families that place a high value on education are more likely to break the cycle. Although studies related to intergenerational illiteracy have been done with children, this is not an area that has been the subject of much discussion or research among adult educators.

Volunteers

Volunteers have become an increasingly important resource for adult literacy programs. Although volunteer tutors have formed the basis of the Laubach Literacy Action (LLA) and Literacy Volunteers of America (LVA) programs for many years, the use of volunteers in adult literacy programs has spread in the past 15 years to a number of other settings. Volunteers currently contribute to programs in such settings as federally funded adult basic education, community-based organizations, libraries, correctional institutions, and churches (Kangisser, 1985).

A number of recent developments have served to increase the visibility of the literacy volunteer movement. Chief among these has been the development of a national advertising campaign designed to attract volunteers into literacy settings. The campaign, which has developed through the efforts of the Coalition for Literacy (CL) and the American Association of Advertising Agencies, prompted more than 50,000 individuals to offer their services in its first five months of operation (Ilsley, 1985).

As a result of increased visibility and use, volunteers are perceived as a valuable resource for adult literacy programs. However, a number of issues surround their use. One issue revolves around the concepts of "professionalism" and "amateurism." Many adult literacy educators believe that reading should be taught by a professionally prepared individual. Related to this belief is the fear that volunteers do not receive proper training, supervision, and other types of support. For example, both LVA and LLA provide volunteers with fewer than 20 hours of training; once they complete initial training, tutors are not required to continue training (V. Meyer, 1985). A second concern is the ability of organizations to deal with a rapid influx of volunteers. It takes resources --money and human--to train, place, and supervise volunteers (Kangisser, 1985). The need to train and place volunteers may strain the limited resources available to most adult literacy programs.

Although volunteers are used widely in many types of adult literacy programs, "very little is known about effective volunteer programs and the resources they require" (Fingeret, 1984, p. 44). Research about volunteer programs could help to eliminate some of the fears expressed regarding the use of volunteers as well as assist programs in using them effectively.

Impact of Technology

The impact of technology is another issue confronting adult literacy programs. Technology is affecting the workplace as well as the instructional arena. It is estimated that in addition to the 27 million functionally illiterate adults, another 40 million are only marginally capable of being productive workers (Elfenbein, 1983). While it was once possible for marginally illiterate adults to function in the workplace, advances in technology are making it increasingly necessary for employees to demonstrate higher levels of literacy for both entry-level jobs and job advancement. As a result of technological developments, a new category of adult illiterates is emerging: persons who do not have the skills necessary to function in the information age (Chall, 1984).

These observations are supported by findings from a recent study that investigated efforts by companies to upgrade the basic skills of their employees (Hull, Fields, & Sechler, 1986). Study findings included the following: the need for basic literacy skills to support workers' higher-order performance on the job is increasing; the nature of work is changing from highly segmented routinized duties to coordinated production processes with greater authority vested in individual production line workers; for high tech companies, a high school diploma is rapidly becoming the new standard for hiring employees; and in many cases, literacy skills are viewed by industry personnel as prerequisites to technical-skill training.

Technology also has the potential of changing the delivery of literacy instruction. According to Fingeret (1984), "the initial research in CAI [computer-assisted instruction] is exciting and promising, although limited at present" (p. 34). Fingeret also points out the lack of commercially available instructional packages that can be used in adult literacy programs. One of the benefits of using microcomputers in adult literacy instruction is that it is a vocational skill. Other forms of technology may also be useful for delivering instruction in adult literacy programs. However, not much is known about the extent of use of instructional technology or its effects.

Need for Better Communication

The fourth area involves the need for better linkages and communication within the field of adult literacy education. The establishment of linkages among the various delivery systems for adult literacy programs is a needed step. According to Fingeret (1984), "State and National leadership must be exerted to bring together all literacy educators regardless of program affiliation. Literacy educators must see their efforts as part of a complex, multifaceted approach to literacy education in the United States" (p. 41). She suggests that, for such linkages to be established successfully, literacy educators must be able to tolerate diverse approaches as well as articulate their own political and ethical frameworks. There is some evidence that linkages are being established among literacy providers. The Coalition for Literacy brings together several national organizations. A number of states have established state literacy coalitions, and local coalitions are being developed in some communities. These coalitions are seldom truly representative. The Coalition for Literacy, for example, lacks representation from a community-oriented organization.

Another need is for better communication among practitioners and researchers. According to Imel (1985), "People on the firing line are too far removed from those people who are doing research or who are disseminating information. There is a need to get into the forefront those people who are close to practice but yet who are knowledgeable about research" (p. 21).

Adult educators who are involved in adult literacy programs also need information from the fields of reading, writing, and cognitive psychology. In teaching reading, adult educators do not seem to do well with persons in the middle area (i.e., grade levels four to nine). It is fairly easy to get people from a zero reading level to about grade four, but after that it becomes more difficult (Imel, 1985). Chall (1984), a leading researcher in reading, suggests that research is needed on how more adults can be brought to a 12th-grade reading level. Adult educators need to communicate with researchers in other fields so that they can work to solve common problems.

Future Directions

Increasing the literacy rate of adult Americans will require multiple strategies. Current activity in adult literacy education bodes well for the future. However, a significant reduction in adult illiteracy depends upon a number of emerging emphases. These include increased research activity, the development of new coalitions, and an increased emphasis on the prevention of illiteracy.

Although the increase in research activity in adult literacy has been encouraging, more research is needed in almost every area of the field. A report issued by the National Adult Literacy Project (Johnson, 1985) spoke to this point:

> Continued research is required to help fill the gaps in knowledge essential for improved practice. Of particular importance are unanswered questions about the differences in literacy development during childhood and adulthood, and about the functional requirements in diverse real-life settings where literacy demands occur. (p. 21)

Fingeret (1984) also discussed the need for additional research saying that "the conduct and utilization of research should become a research priority" (p. 43). She calls for research to provide information about the following areas: the processes through which adults learn to read, effective volunteer programs and the resources they require, the characteristics of illiterate adults, and the technology of instruction.

The formation of coalitions will continue to play an important role in the development of adult literacy programs. The Coalition for Literacy has already established a model for using this strategy to combat adult illiteracy. Adult educators are recognizing that the problem of adult illiteracy is of such magnitude that there is plenty of "business" for all providers. In other words, there is no shortage of clientele for existing programs. There is also increasing recognition that a range of program opportunities needs to be available to serve diverse student populations. Thus, it makes sense to form coalitions to provide services for adults seeking literacy education.

Increasingly, business and industry are playing a role in adult literacy education. Not only are many companies providing support for local efforts, but also some are sponsoring in-house adult literacy training programs for their employees. As coalitions are formed, every effort should be made to include business and industry representatives as well as representatives from more traditional providers of literacy education.

Although remedial measures are needed to combat adult illiteracy, more attention is being focused on its prevention. Effective preventive measures cannot completely eliminate adult illiteracy. They can, however, reduce the flood of 2.3 million new adult illiterates entering the pool each year.

The National Advisory Council for Adult Education and the National Adult Literacy Project (Johnson, 1985) have emphasized the prevention of illiteracy in recent reports. The reports on educational excellence have increased the public's awareness of the need to increase achievement levels during K through 12th grade. Specific strategies mentioned by Johnson (1985) that can be used to prevent illiteracy include more transgenerational programs that help illiterate or semi-illiterate parents become role models for learning; public library programming for children and youth; and identification and dissemination of successful strategies for teaching reading.

Existing literacy programs are able to serve approximately 4 million adults per year. Given the influx of adult illiterates into the population yearly, current efforts make little or no headway in reducing the total number of illiterates. The solution to the problem of adult illiteracy will require the combined efforts of the public and private sectors; the individual efforts of both professionals and volunteers; and additional resources to fund needed research and to support new programs.

Summary

This chapter has examined four representative issues affecting the fields of adult, career, and vocational education. These include: (a) What career-related curriculum should be incorporated into the new basics? (b) What contributions can vocational and career education make to reducing the dropout rate? (c) How can articulated secondary-postsecondary programs support high-quality occupational training? and (d) How can literacy programs increase the literacy rate among adult Americans? These issues are representative of various educational levels and grow out of three major trends, including the effects of a changing workplace on occupational and educational requirements, the growing concern for reaching disconnected youth and adults, and the current emphasis on educational excellence. The purpose of this review has been to clarify the context surrounding each of the issues, to describe emerging and promising educational approaches, and to suggest future directions needed to strengthen research, development, dissemination, and implementation.

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CURRENT ISSUES AND TRENDS IN GUIDANCE AND COUNSELING

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The 1980s have witnessed a resurgence of interest in and demand for counseling services. In a wide variety of settings--schools, college, agencies, and business and industry--involving a range from precocious elementary children to reflective post-retirement adults, new programs and practices are being developed to respond to the diverse calls for counseling assistance. Growth in professional association size, one clear indicator of the vigor of a professional specialty, has demonstrated the increased involvement of its members in new areas of activity. In just the past year, the membership of the American Association for Counseling and Development increased by over 10%, bringing the total to approximately 50,000 members. Unlike earlier growth periods, the largest gains in membership were in those divisions related to mental health, family issues, and adult agency settings, rather than the traditional areas of schools and colleges. These trends in association growth resemble mosaics of bold and sometimes minute patterns that reveal the areas in which our society is seeking counselor assistance. An analysis of these areas can provide rare glimpses into the innermost hopes, aspirations, needs, and problems of our total population.

As counselors encounter needs for assistance, they face numerous challenges and issues--whether to respond and how, what priorities to give to their services, and how to sort out the important from the urgent. What methods they use and the decisions they make will reflect their central values and will initiate a response trajectory which will illuminate the paths that counselors will follow for the near future. Charting the new and emerging directions of counseling and the accompanying issues and dilemmas is not unlike the task of viewing a detailed road map of an unfamiliar location. The options may be so great and information about each one so sparse that a choice is difficult. With so many populations and settings to be served, counselors may easily lose their way in a jumble of turns, detours, and dead ends. The journey may be most rewarding if counselors seek out the superhighways of counseling practices and services--those central issues and topics which will most expeditiously lead to the principal cities of challenge and concern for all counselors today. This summary focuses on four of those critical issues: computers in counseling, students at risk, pre-college guidance, and career guidance.

Computers in Counseling

Counselors in many schools today question whether computers, on balance, are more likely to benefit or detract from counseling. Both the negatives and the positives are persuasively argued at the present. One of the most frequently mentioned "threats" is that computers will mechanize guidance and counseling and take away the warm, interactive process that characterizes the work of a counselor with the student. A second area of concern is that of confidentiality. As computers can collect and store large amounts of data on students for long periods of time, there is considerable potential for abuse by unauthorized users. The third frequently expressed concern is that clients tend to interpret the objectivity of the computer as evidence that the information obtained from it is completely valid and reliable--that it need not be questioned or challenged. This can be a problem especially in computer-assisted testing, assessment, and information retrieval. A fourth, less openly expressed fear is that the computer will replace the counselor or, at the least, demean the counseling role by leaving only inconsequential tasks for the counselor to do.

While all of the threats have a basis in reality, they have shown themselves to be readily removed by appropriate safeguards, training for the staff, and orientation for student users. When safeguards are instituted, computers give clear evidence of the ability to enhance and extend the counselor's activities and outcomes. This can be accomplished through computer-assisted guidance and computer-supported guidance. Computer-assisted guidance may be defined as an interactive guidance technique in which a computer is used to present information, solicit and monitor responses, and select and present additional information in accordance with individual client needs. Computer-supported guidance may be defined as the use of a computer to maintain and analyze student data and to document and analyze the guidance program activities. Computer-supported guidance may also include administrative uses that are not directly related to the guidance process, e.g., recordkeeping and word processing, which increase the amount of time counselors have available for use with students.

Four frequently mentioned advantages of computer-managed guidance are uniformity, availability, the capacity to store and retrieve large amounts of information, and the possibility for direct student and computer interaction on topics of need and interest to the student. Most developers of computer-assisted guidance systems make no claims that computer-assisted guidance can replace the interaction between a student and a counselor, but rather say that it can increase the counselor's capability to work better and with a larger number of students through improved preparation of both the student and the counselor for their interaction.

Computer-assisted guidance research and evaluation studies have concentrated for the most part on examining clients' reactions to the experience and the impact of the system on the student's career decision-making process. A review of research on the use of these systems would warrant the following conclusions: (a) students react very positively to the experience of using them; (b) knowledge of self and the world of work is expanded; (c) students develop more specific career and educational plans; (d) students express greater confidence in their ability to make career decisions; and (e) students are more motivated to use additional career planning resources to assist them in making further decisions.

Caution needs to be exercised in interpreting these conclusions, however, as the research to date is limited and the different systems now available to counselors vary considerably in content and scope.

Counselors have expressed ambivalent feelings about the adoption and use of computers in counseling. They have been attracted by the computer's storage and retrieval capability and the resulting benefits for student decision making, but they have also been concerned about the consequences of using a costly tool about which there is limited knowledge and the potential for serious abuse. Overall, it would appear that a number of generalizations are appropriate regarding the use of computers in counseling.

1. Any use of computers should be based on a study of the individual school and its guidance program and a determination of the specific areas in which the computer could be helpful. General prescriptions about the desirability of using computers in counseling frequently are inappropriate and go awry in specific settings.

2. The adoption of computers is only the first step. More important than the initial decision and the actual introduction of computers is the selection of appropriate software. The usual procedure of selecting the computer first and the software second should be reversed--careful piloting and experimentation with software is the essential part of ensuring that computers will contribute to the guidance program.

3. Preparation of the counselors and other personnel who will be using the computers is an absolute essential. All too often the computers are obtained first, followed by a hurried, catch-up effort to provide the users with enough understanding and skill to "make the computers work." Counselor training should coincide with the acquisition of the computers, and counselors should be involved at all stages in the adoption and adaptation of their use in a particular guidance program.

4. Orientation of students and parents to the use of computers is extremely important. With ongoing orientation, students can develop appropriate expectations about computers and also acquire skills which will enable them to maximize the benefits from their use.

5. Constant evaluation and review of the outcomes of using computer-assisted and -supported guidance and counseling systems are absolutely essential. If installed and then left without staff involvement and/or monitoring, the systems will turn into window dressing with little real impact upon the students, or they will be used inappropriately and lead to misinformation or poor decisions by students.

Most of all, it appears that guidance and counseling programs are or should be in a stage of tryout and experimentation with the use of computer-assisted and computer-supported guidance. There are many options and opportunities, and the decision to adopt a particular system or software needs to be the result of studying priorities in a given guidance program and matching those priorities with the systems and software currently available.

Students at Risk

Nearly 2-1/2 million youths are at risk of being alienated from school, society, and work (College Entrance Examination Board, 1986; Schappi, 1985). Statistics tell part of the story:

- 5,000 to 6,000 teenagers commit suicide each year, and ten times that many attempt to do so. Because many attempts go unreported or are reported as accidents, the number may be as high as 500,000 per year (Peters, 1985b).
- One million teenagers become pregnant each year, and three-quarters of the pregnancies are unintended. While the overall teenage birthrate has declined, the out-of-wedlock birthrate continues to rise (Lachance, 1985b).
- Nearly 700,000 students drop out of school each year, and 300,000 become chronic truants. Among unwed teenage mothers, 13-24% leave school (College Entrance Examination Board, 1986; Schappi, 1985; Guttmacher Institute, 1981, in Lachance, 1985b).
- Three million youths aged 16-19 are looking for jobs and unable to find them, and 391,000 have quit looking (College Entrance Examination Board, 1986; Schappi, 1985).
- A 60-fold increase in juvenile arrests occurred between 1960 and 1980 (College Entrance Examination Board, 1986; Schappi, 1985).
- While the rate of alcohol and drug use among teenagers has gradually declined since 1980, usage levels remain high. An estimated 3.3 million teenagers are alcoholics, and 63% of all young people try an illicit drug before they finish high school (Johnston, O'Malley, & Bachman, 1984).

Youths at risk are not confined to a particular class or race, and in addition to the official statistics mentioned above, 10-15% of all 16- to 19-year-olds are estimated to be suffering from general alienation (College Entrance Examination Board, 1986; Schappi, 1985). How much of this is due to fundamental changes in the structure and status of the family is open to argument, but the rising numbers of dual wage-earner families, divorced parents, and single-parent or step families also constitute a phenomenon that cuts across socioeconomic strata. Again, the figures are troubling: estimates of children under 14 in regular self-care before or after school ("latchkey" children) are as high as 4 to 6 million (Frenza, 1984). Forty-one percent of children born into marriage will experience family disruption due to separation or divorce, and 46% of children entering a second family will go through a repeat disruption (Bundy & Gumaer, 1984)

As grim a picture as these statistics paint for the youth involved, the consequences for society at large will be devastating if their needs are neglected or ignored. Ironically, while the school reform movement has stimulated countless local and state initiatives to improve education, it may have exacerbated the problem. Such measures as lengthened school days, more homework, and fewer electives often are mechanistic responses to a complex situation and may themselves contribute to student alienation. For students already able to cope only minimally, the stress on intellectual rigor and competitive academic performance may serve chiefly to ensure their failure.

Counseling services have thus become even more necessary for all students, but particularly for those at risk. Among the programs and interventions with demonstrated effectiveness are the following:

1. Because it is essential to get it right the first time, preventive services are of paramount importance. This means more and better early childhood programs, problem identification, monitoring of students' progress, and working with parents to provide crucial early support. With "latchkey" children, for example, successful interventions have included group and individual counseling in the school setting to deal with children's fears of being alone, survival skills training as part of the curriculum and in parent education programs, and quality before- and after-school care programs.

2. High school students are turning to counselors for suppor previously available from parents and other institutions, and at a time in their lives when the issues in education, life, and career decision-making are particularly salient. In addition to specific information and skills, counselors are at the front line in helping students assess and believe in their own potential, the single most important factor in maintaining motivation and persistence. Studies have concluded, for example, that it is not teacher mastery of content that makes the most difference for students, but the ability to inspire them.

3. For students in at-risk categories, targeted interventions become even more critical. Teens of divorce in single-parent families, for example, comprise a population where correlations exist with low grades, truancy and acting-out behavior, and where the dropout rate is double that of teens from two-parent homes. As many as one-third of children of divorce may also be dealing with the consequences of alcoholism in the family. Group counseling with these students has produced a number of solid gains, perhaps most importantly the sense that they have control over their own lives. The gains are reflected in better communication with parents and in increased self-esteem, which has led to substantial improvement in classroom behavior and academic performance.

School counselors have played a significant role in helping at-risk students, as well as parents, and the demand is rising as the numbers and needs increase. But the numbers of counselors are not keeping pace, partly because budget trimmers regard guidance and counseling as an unaffordable luxury and because advocates of academic excellence see it as tangential, if not irrelevant, to the learning process. The range of public opinion presents another hurdle, from resisting a perceived invasion of family privacy to expecting full psychosocial services.

If students at risk are to be helped to overcome their difficulties, it will require the interventions and special programs that guidance counselors can provide. Unless support for this assistance is forthcoming, large numbers of students will be denied the opportunity to achieve their potential as individuals and to contribute to society.

Pre-College Guidance

An issue of immense importance to current school guidance programs and to the design of future programs is whether and how pre-college guidance and counseling impacts on students. In a time of stringent financial demands and a desire for improved academic performance, the critical question is whether school guidance programs as we know them should continue and what, if any, changes or improvements should be made. The importance of this issue has come into sharp focus with the release of the report, "Keeping the Options Open" (1986) by the College Entrance Examination Board, a report based on an extensive study of the condition of pre-college guidance.

Underlying the discussion is the fact that the school reform movement has brought neither increased attention to nor support for guidance and counseling, with the result that counselors are expected to do too much for too many. Pre-college guidance is one of the areas that is short-changed, despite the evidence that counseling interventions make a difference in who has access to college, who attends, and who stays in and does well. Studies have demonstrated the significance of counseling services in motivating students to stay in school; assisting them to overcome negative expectations imposed by peers; helping them to break out of the straitjackets imposed by school tracking systems; sharing perceptions and understandings about students with administrators, teachers, and parents, which in turn enable them to be more effective in working with students; providing accurate and reliable information about careers, colleges, and after-school work opportunities to students who otherwise lack access to information; and helping students to manage transitions between different school levels.

What can be done to improve guidance and counseling services in schools has also been the subject of much analysis and research. Among the findings are the needs for improving program resources, reducing student-counselor ratios, clearly defining counselor job descriptions and responsibilities, reducing administrative chores, and setting clear priorities for guidance and counseling at different grade levels as a means to moderate the conflicting demands of teachers, parents, and students.

A particular problem area is access to counseling services, which has been found to vary considerably from district to district and from school to school. Unfortunately, the data would suggest that those students who could most benefit from the counselor's specialized skills and information (minority and low-income students) are the students least served by counseling. Another issue for many schools, although not always clearly stated, has been whether the resources now devoted to school guidance programs could be better used in direct improvements of instructional programs.

Clearly, there is a need for strengthening the school guidance programs in the following areas: (a) Provide greater preparation for counselors, both in inservice and preservice, in areas relating to career and educational planning and placement. Some counselors are highly knowledgeable and perform this function extremely well; others are inclined to see it as less important than personal counseling for a relatively small number of students.

(b) Make guidance an integral part of the curriculum so it can contribute to overall school goals, as well as accomplish specific guidance objectives. (c) Make sure that counselors, administrators, and teachers work together to more clearly identify the important functions of counselors, including a delineation of day-to-day responsibilities. (d) Increase the use of technology to improve the quality and range of assistance that counselors can provide to students from elementary through senior high school. (e) Collaborate more extensively with community agencies, teachers, and paraprofessionals to implement guidance functions, thus increasing the availability of services. (f) Develop linkages with business, industry, and government, both to establish goals and to provide resources for program delivery. The counselor and the school should actively seek out business and government leaders and work at extending the range and depth of these relationships.

In the view of one analyst, "If all students in our schools were served as well (by guidance) as those who are now the best served, there would be no problem" (College Entrance Examination Board, 1986). The task is clearly to identify how schools can effectively expand the use of those pre-college guidance interventions which lead to greater access to and equity in college attendance and improved academic performance at college. To accomplish this will require the redirection of both financial and human resources to ensure that educational reform includes the strengthening and improvement of guidance and counseling services.

Career Guidance

The first 45 years of career development theory and practice (referred to earlier as "vocational guidance") posited that the central role of the vocational guidance counselor was to assist clients in making occupational choices. The procedure used by vocational counselors was essentially three-fold: (a) determine the salient traits and abilities of a person through testing; (b) identify occupational opportunities through review of occupational literature and employment trends; and (c) assist the person to choose the occupation which best fits his/her characteristics--that is, the best match between what a given person was like and what was required of an individual in different occupations. This "test and tell" method was the method of choice for career guidance well into the 1950s. At this time a more comprehensive view of an individual's development became accepted. It was seen as occurring over the life span and involving a far broader array of essential concerns than just occupational choice. Since that time career guidance has split into the traditional choice-focused group of practitioners and a developmentally-oriented group that sees occupational choice as a developmental process. Through the use of the term "career development," these latter practitioners express their preference to view the development of an individual career-wise as "the total constellation of psychological, sociological, educational, physical, economic, and chance factors that combine to shape the career of any given individual" (National Vocational Career Guidance Association, 1973, p. 8). Limitations in funds and a desire for a practical and direct approach to providing assistance at critical junctures in a person's life (i.e., choice of an educational major or applying for a job) sharpened the quiet debate over those who wanted to emphasize development over the life span and those who chose to see career guidance as helping people make the right choices. This disparity in what career guidance is and how it should be delivered has contributed to a major reexamination of career guidance and career development with a concomitant explosion in the writing and research devoted to it. The following major questions regarding the roots and future growth of career guidance have been explicit in the recent writing and reexamination:

1. Should the increased societal recognition of the importance of career development lead to more comprehensive and longitudinally-oriented career guidance programs?

2. What theoretical concepts regarding career development should drive the new programs?

3. What effect on career guidance will the changes in the occupational, social, educational, and economic climate have?

4. To what new populations and in what settings should career guidance be expanded?

5. What changes have occurred in the number, diversity, and quality of career guidance programs, tools, and techniques?

6. Is there a need for greater collaborative efforts among business, industry, community, and education to promote career development?

Since the early 1950s as many as ten major theoretical approaches have been discussed in the career development literature. In essence, these theoretical approaches have moved career guidance from an emphasis on a one-time occupational choice that was presumed to last an individual for a lifetime to a greater realization and incorporation of the totality of the individual and the need for a lifelong process of career decision making and planning. Most basically, the different theoretical approaches can be categorized by their emphasis on process, or the stages through which an individual moves during a lifetime of career development. The first approach gives major emphasis to these different stages, the means individuals use to resolve the challenges and questions of each stage, and the individual's life roles that are associated with the different stages. The second major approach emphasizes the content of career development, placing the primary emphasis on the characteristics of the individual and suggesting that the personal attributes of a given individual are predictive of what will bring satisfaction to him or her in a career choice. A few theorists have suggested that appropriate career development must combine both content and process and deal with how individuals grapple with both the developmental process which they will experience, the realities of their own personal world (intelligence, ability, values, interests, and so on) and the world about them, and the realities that the external world imposes upon an individual through his/her lifetime.

More recently, there has been growing cognizance of the need to integrate and synthesize the major concepts and theoretical approaches into a series of working generalizations which can be the basis for personal interventions by career specialists in working with persons desiring assistance in career planning and decision making. The following generalizations represent a succinct statement of an integrated theoretical perspective on career development. They suggest what should be the appropriate focus of a career specialist in planning and carrying out their career guidance interventions in providing assistance to individuals and groups.

1. Each individual can expect to experience a number of different occupations in his or her lifetime. Change in occupational focus and performance is the rule rather than the exception. An important determinant of any given person's satisfaction and success in his/her lifetime career is the ability to manage change, particularly as it applies to major life transitions.

2. Individuals who have recognized the importance of assuming personal responsibility for their life-career development and undertake a purposeful and systematic approach to exploring both their own personal selves in terms of abilities, interests, values, and needs, as well as the important determinants in the society about them, are more likely to experience satisfaction and rewards in their occupational and career life than those who see an occupation as primarily a function of chance and/or availability.

3. Individuals of the same socioeconomic group and with presumably similar educational and personal developmental experiences may vary greatly in terms of their vocational maturity and their ability to undertake responsible and effective career planning and decision making. High ability and desirable educational experiences are no guarantee that the individual has either the specific abilities needed or the understanding and motivation necessary to ensure effective career planning.

4. Essential to the career- and life-planning process is the need to understand the importance of systematic attention to and review of one's needs and opportunities throughout a lifetime and to be flexible and willing to change as a result of the ongoing review.

5. Individuals view their careers differently and demonstrate career-related behaviors at different times in their lives. A lack of interest or involvement in career-related behaviors is not a good predictor of what may occur at a later time. An individual's occupational choice and the desires for specific jobs are both influenced by and predictable from individual characteristics. Among the more important of these characteristics are intelligence, academic achievement, the possession of special skills and talents, the ability to respond, and the ability to relate to and interact with other people. Other important factors are individual needs, personal and life values, preferred life goals, and personality characteristics.

6. Factors external to a given person can play an important role in affecting that person's choice of an occupation and a specific job. Among the important factors are reinforcement received from significant others, the success of prior-related work experience, family structuring and influence, the specific condition of society at a moment in time, the opportunities for learning, and the access to and retrievability of relevant information.

7. Many individuals experience a process where they first engage in broad exploration, then move to a crystallization or greater focus of their interests. Personal satisfaction and occupational success in a given occupational field depend to a large extent on how well individuals are able to express their values and interests and to play roles that they see as appropriate for themselves.

8. Occupation is an important part of an individual's total life career. Within this career, occupation, family considerations, desired lifestyle, leisure, and personal values all play an important role and need to be considered in career planning and decision making.

9. Individuals need to be assisted not so much in finding a job or an occupational area, but rather in creating one which is consistent with both the individual's personal needs and desires and the realities of the workplace and society in which the individual will function.

New Populations Served by Career Guidance

As career guidance comes of age, questions are increasingly being raised regarding what populations should receive major priority or emphasis in the delivery of career guidance. Traditionally, white males, particularly those of school and college age, have been the primary benefactors of organized and systematic efforts in the delivery of career guidance. The materials which were developed, such as tests and occupational information, all illustrate this bias towards use by and for white males. With a new emphasis in our society on equal opportunities for education and personal development for all, there has been an increasing recognition of the need to expand the base of those who receive the benefits of career guidance.

Certainly one of the groups that have led in the call for an expansion of the coverage of career guidance services as well as the development of non-biased career guidance materials has been women. Articulate spokespersons for this group have identified the need for early exposure of young girls to non-traditional careers and the importance of making them aware of the fact that they will likely devote the majority of their adult life to a career, either in addition to or rather than home and family life. Especially, there has been a clearly identified need for role models of women who have entered and been successful in non-traditional occupational settings. In working with both girls and women, it has proved to be important to (a) help them understand their talents and the potentialities of those talents for a wide variety of careers, not just the more traditional ones; (b) realize the need for females, as well as males, to develop a career awareness and sense of responsibility for developing their careers early and throughout their life; and (c) stress the importance of learning specific career decision-making and planning skills which will be used throughout life, particularly at critical career and life transition points. In offering career services for women, it is particularly important that there be adequate assessment to provide convincing evidence to the female client of her unacknowledged talents and skills and to assist her in the job search process, especially dealing with the difficulties and frustrations associated with finding a job in a market that has not traditionally been either open or hospitable to female applicants.

Much progress has been made in the design and the offering of programs for women, including a special modular series developed by the Women's Division of the Department of Labor. Much more needs to be done, however, if the present efforts are to be more than just window-dressing. Deeply felt attitudes and feelings, frequently reinforced by traditional family views and values, will negate much of the effort to expand women's career options unless the programs which are undertaken are comprehensive and extend over a period of time and are not just a one-shot effort.

As there has come to be an awareness of the need for more adequate career guidance services for women, so has there been an increasing need to recognize the importance of career guidance services for minorities, both those who are native-born Americans and those who are recent immigrants to this country. Of particular importance in tailoring career guidance services for these populations is the recognition of differences in values and belief structures of the minorities involved and, in many cases, the need to present materials in the appropriate language (e.g., Spanish). In some situations, the predominant Protestant work ethic may not exist to the same degree or evoke the same response among minorities as it does among Americans who have lived in this country for generations. What are relevant materials and approaches for the traditional American population may not work nearly as well for those newly introduced into American life.

Also of increasing importance is the need to provide career guidance services for the handicapped, services which are cognizant of the occupational implications of whatever handicap a given individual may have, both in the training plans and in the preparations for the job search. The handicap should be acknowledged and responded to in a way that maximizes the potential contributions and talents of each individual, rather than focusing on the negative aspects of a particular handicap. Counselor concern for the attitudes and feelings of the handicapped person is required in preparing the individual to cope adequately with those special adaptions needed to minimize interference which may occur in their work patterns as a result of their handicap.

Perhaps one of the most recent population groups to receive special attention in career guidance is that of older adults. Many individuals who have either voluntarily or involuntarily retired from a previous career find that retirement does not hold the psychological rewards that they expected it would or, out of financial necessity, find the need to return to the workplace. For many of these older adults entering their second (or even third or fourth) major occupation, it is important that they have the opportunity for a full review of their past experiences and their needs and wants so that they may be represented in a new occupation. It is particularly important that they be helped to identify occupations and/or community services which build on their past experiences and also provide them with appropriate psychological and social rewards. For many older adults, career guidance services are not so much geared towards locating a specific job as they are toward helping each individual identify areas of profitable involvement where they can meaningfully contribute their time and effort.

New Career Guidance Programs, Tools, and Techniques

A number of new approaches to providing career guidance have emerged or have received new emphasis during the resurgence of career guidance. Among these are: (a) self-managed approaches to career guidance; (b) the use of networking to reinforce career guidance activities; (c) the use of group counseling to expand the numbers of people reached by career guidance; (d) the use of technology, particularly computers, to assist in career assessment as well as career planning and decision-making; (e) the use of system designs in which a variety of different elements are fused into one comprehensive program and (f) the development of collaborative efforts among business, industry, education, and the community in offering career guidance programs.

1. Self-managed approaches. A major focus in recent career guidance efforts has been the use of cognitive restructuring with career clients. Here the emphasis is on exploring how an individual views a given occupation and his/her ability to carry out or cope with different career development tasks and transitions. An individual's beliefs and presuppositions about careers and his/her ability to perform in them have a great effect both on how one responds to an occupation, and on what one decides regarding training or job seeking. In cognitive restructuring the individual is assisted in examining his/her beliefs and values and helped to overcome debilitating and erroneous beliefs and perceptions which interfere with their making of decisions and taking of actions for the best.

2. Networking. While an individual may gain much from interaction with a career counselor or career guidance service, the separation between when they are helped during the career counseling and when they take action on their decisions and plans can be great. Therefore, the establishment of networks of individuals with a common concern and interest in furthering their career development can provide useful emotional support and positive reinforcement of decisions and plans made during counseling sessions. Usually led by a trained career specialist, networking programs have proved to be both popular and effective in helping people to capitalize on the intellectual insights gained through counseling and to follow through to concrete actions and behaviors.

3. Group counseling. Group counseling used both by itself and in conjunction with computer-assisted career guidance programs has proved to

be a useful way to reach large numbers of people who are seeking ways to improve their career planning and decision making. The process of sharing one's career goals and actions with others can be helpful in reducing the sense of isolation and despair frequently experienced by people frustrated in their career planning. In addition it assists them in acquiring a variety of practical and useful career planning and decision-making skills.

4. Use of computers and technology. As discussed previously, a major development in the counseling field has been the use of computer-assisted career guidance programs which both complement and supplement the work of an individual or group counselor. These computer-assisted guidance programs, which are predominantly career-oriented, have been shown to be especially helpful to individuals in developing a greater career awareness, in considering a variety of different career options, and in making use of comprehensive and relevant occupational information in their planning and decision making. Because of the tremendous strides being made in computers and technology, it is likely that some of the greatest changes in how career services are offered will occur as a result of the greater utilization of computers and technology. Technology may best be thought of as a two-edged sword that can assist the counselor to do things easier and better (such as provide occupational information) or do things that counselors cannot now do (such as provide immediate feedback on assessment devices); or they can cut in a negative way in that they may overwhelm the individual's rational decision-making processes and encourage the client to give too much credence to the information provided by the computer.

5. Use of a systems design. Many of the career guidance programs currently located in schools, colleges, and agencies have "grown like Topsy." When a new program component or resource is added to the existing program, the program may grow disproportionately in some areas and wither in others. The career guidance systems approach has given emphasis to the development of carefully thought-through goals and the systematic analysis of how those goals may be achieved using a variety of resources, both human and machine. The systems approach has the advantage of matching the particular needs and interests of an individual with the available resources, giving particular attention to the learning style, situation, and need of each individual. By treating everyone as someone special, the counselor is able to maximize the individual's learning.

6. Collaboration among business, education, and the community. One of the most challenging new career guidance emphases is the emerging coalition among business, education, and community to offer meaningful career guidance programs for both youths and adults. The planning and actual operation of the career service involving the efforts of people representing these different sectors provides an unusually rich set of experiences both for the client seeking the career guidance service and for those who are offering it. These collaborative career guidance efforts are noteworthy for their ability to expand the vision of the individual experiencing them and to assist the individual in focusing on what are meaningful and realistic objectives for performance in the workplace. Through shadowing (following a particular person through his/her work for a period of time), internships, and planned work experiences, collaborative

efforts are offering rich experiences that result in better career choices, as well as increased motivation for the acquisition of competency in a chosen career area.

Images of a Zesty Future

A review of current trends and issues in guidance and counseling would be incomplete without reference to what the future will bring. Knowledge of the present is of particular use in determining what needs to be done and can be done to shape the future to meet our highest preferences. A series of images are presented which describe the major focuses that will characterize guidance and counseling in the near future. Hopefully, such discussion will focus action on what can be done to stimulate a flexible, productive future.

1. Integration of life and career development. There is an increasing understanding of the development of each individual's lifespan and the important transitions and challenges each individual will experience during his/her lifetime. At each of the major life transitions, significant teachable moments, and compelling decision points, people of all ages and all circumstances will increasingly seek and benefit from the intervention of counselors. At these times, developmentally-oriented counselors will assist them in developing life coping strategies that will better equip them to deal with the challenges and vagaries of life.

The major emphasis in life and career development integration will be the increasing recognition of career development and the importance of viewing the interrelationship among work, education, and leisure, and the need for all people to be constantly aware of and willing to prepare for the different roles that they will play at different stages of their lives. These roles will change with the age and circumstance of each individual, but they will have impact on the individual in varying degrees throughout each individual's lifetime.

2. Focus on wellness, rather than eliminating problems or overcoming disabilities. There will be an increasing recognition of the importance of dealing with the mind-body relationship and the need to consider the two in relationship with one another. Stress, personal vitality, creativity, even longevity, will increasingly be recognized as matters involving the mind-body interaction and will require counselors to respond to the totality of the individual, rather than the symptomatology of a problem or condition. Counselors will be challenged to expand their knowledge and to look for developmental orientations that help to build health and higher level living skills, rather than to respond solely to immediate problems or concerns.

3. Emphasis on self-directed development, rather than professionally delivered services. A number of the emerging trends and emphases (e.g., integration of life and career development, wellness orientation, technology, systems approaches) will contribute to and emphasize the importance of each individual's assuming responsibility for his or her own development.

Counselors will focus on providing individuals with the tools and the strategies that will enable them to continuously monitor their state of development and to be cognizant of the different self-help strategies and resources that they can use to help them deal with a particular challenge or transition.

4. Expanding use of computers and technology. We are only beginning to comprehend the enormous inroads that computers and technology are and will be making into all phases of our life. With advances in artificial intelligence and the prodigious achievements occurring in computer and technological hardware, the capabilities for offering a variety of services to people are growing exponentially. It would seem clear that the expansion in the capabilities of technology will facilitate some of the previously identified trends such as development over the life span and self-directed development. As great as the potential is for the impact of technology upon the learning of the user, there also are major implications for how counselors define and deliver their counseling in a time of rapid technological development. Technology clearly offers new avenues of assistance to clients in their learning and development. It also challenges the efficacy of many existing forms of delivery of assistance to clients.

5. Emergence of human resource systems as the norm rather than the exception. We have witnessed a slow but increasing growth in efforts to combine human and physical resources in the most judicious and expeditious way to assist individuals to achieve their significant goals. The use of systems methodology will offer clients a choice of the means by which they may acquire knowledge and skill to achieve an important goal or objective. This will be facilitated by the expansion of technology and an increasing emphasis on having specialists help clients direct their own learning and development efforts. Functioning as learning designers, counselors will assist individuals to define which admixture of physical resources combined with human intervention is most appropriate and effective for a person, given his/her own particular learning style. People's choices of what and how they learn will be greatly expanded and their need for counselor assistance will frequently take the form of consultation. Counselors will become developmental learning specialists who provide information on how clients, as persons with special needs and characteristics, can best acquire a particular skill and/or respond to a given need or interest of theirs. Disparate or isolated programs that are not part of a larger learning design are likely to receive scant attention and use.

6. Provision of assistance to larger groups of clients. Economic as well as psychological forces will work to increase the numbers of people who receive assistance at any given time. Either through larger physical groupings or through the use of electronic means to link people who are separated geographically, counselor contact and intervention will be less focused upon individuals and more upon clusters of individuals with shared interests and needs. In many cases, the individual interventions will take the form of validating self-assessments and planning and decision-making and looking for ways to improve upon or detect flaws in the strategies and plans developed by individual clients. Individual interaction between client and

professional specialists will be a precious commodity and those interactions will increasingly deal with client concerns which are least well met by other means.

7. More specialized strategies and resources for responding to people in need. With improved means of detection and an increasing desire to alleviate problems in learning and adjustment which would become magnified over a lifetime, more specialized resources and strategies for dealing with people in need or at risk will be developed. Building upon the available research and knowledge regarding what has and has not worked with similar people in the past, educational institutions and community agencies will have available a greater array of resources and intervention strategies that will enable them to respond and be helpful to people in need. Likely candidates for this increased developmental effort are poor student performers, those experiencing various forms of drug and alcohol abuse, and those persons who are the victims and/or potential victimizers of physical abuse. There will be an increasing desire to bring together the knowledge and resources available to provide counseling assistance to people in need earlier in their time of travail and to follow through to ensure that the assistance has been effective in bringing about change and improvement in behavior.

8. Major changes in the roles and responsibilities of counselors. Perhaps one of the greatest challenges of all will be the counselor's ability to understand and respond to the new challenges as well as the new opportunities that exist for them. In many cases they will need to make a major paradigm shift--not merely small changes in how they think or act about a problem, but radical changes in how they both think and act in response to changed societal conditions and the availability of new technologies. There will be a need for greater risk-taking and experimentation on the part of counselors; they will need to monitor their work as to what is effective and what is ineffective; and they will need to continually improve the quality of the services they provide for their clients. In the end counselors will either flourish or perish based not so much on available resources, but on whether and how counselors choose to adopt and use the new resources in how they think and respond to their user needs and interests.

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TWO PROBLEMS IN THE TEACHING OF ENGLISH

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Two major issues within the scope of the ERIC/RCS Clearinghouse are teaching grammar and defining the content of the English curriculum. In this analysis of these problems, the views are one educator's perspective, but the ideas are rooted in theory and research.

Teaching Grammar

A favorite teachers' lounge story concerns an English teacher who substituted for a friend at a bridge game. The pre-game conversation was casual enough until someone asked the newcomer, "Well, Bob, what do you do for a living?" When Bob said he was an English teacher at Central High School, an icy lull settled in the room. "Well," someone finally volunteered, "Whom deals?"

Few subjects have generated more social anxiety, academic debate, and outright anger than grammar. The common rationale for teaching grammar is that a person cannot speak or write well without knowledge of formal grammar. Moreover, study of the structure of language--from parts of speech to phrases and clauses to paragraph structure to essays and longer works--seems essential to the education of a well-rounded person.

But, on the whole, neither the traditional study of school grammar nor the introduction of new grammars into schools has succeeded in making America a nation of skilled speakers and writers. In fact, the problem of teaching grammar as a means of improving communication skills has increased with our nation's commitment to universal education. The Education Commission of the States (n.d.) notes that in 1920 an elite 10% of the population was in school By 1980, some 80% of our children were graduating from high school.

As we strive for true inclusiveness in American education, we reach out to more diverse language communities--to students with varied cultural and linguistic backgrounds. It will not do to point to brilliant exceptions --individuals from poverty backgrounds and from nonstandard dialect environments who "made it" despite difficult odds. If we really intend to help most students to become articulate speakers and writers, we must either find better methods of teaching grammar or seek out other ways to improve students' abilities to speak and write.

The strategy in outlining this problem and suggesting solutions will be to define some basic terms--grammar (including traditional grammar, new grammar, and school grammar), standard English usage, and communicative competence--and use those terms to provide a brief historical perspective and explain why grammar has been controversial among scholars, teachers, and educational reformers. Then research on grammar instruction will be discussed. Finally, this section will suggest future directions for the teaching of grammar, taking into account various elements in the controversy.

Definitions and Issues

The term "grammar" as used by language scholars refers to a body of knowledge about the structure of language. For most grammarians, grammar refers to sounds in language and the structure of words and sentences. The grammarian's scholarly role is to describe language and how it is generated, not to prescribe ways in which people should talk or write. In elementary and secondary schools, grammar instruction has always had a prescriptive goal--improving students' speech and writing. But of course, it makes sense to expect that prescriptive instruction should be based on a sound scholarly description of language.

Grammar scholars have long noted that "school grammars" are based on oversimplified, inaccurate, or outmoded views of the English language. Considerable pressure has existed over the years to change textbooks, elementary and secondary curricula, and teacher training programs to reflect deeper insights into the nature of English. The pressure peaked when adaptations of the "new grammars," such as structural and transformational grammar, were introduced into many books and programs in the 1960's and 1970's, with sentence slots and branching tree diagrams augmenting or replacing traditional grammar instruction.

The new approaches were not well received by most teachers. The concepts in the new grammars, besides being unfamiliar, were frequently much more abstract (even in their inevitably simplified form) than the already complicated school grammars derived from traditional grammar. Consequently, the sophisticated new grammars seemed ill-suited to the teacher's goal of using grammar study prescriptively to improve students' speech and writing. Further, the scholarly debates among linguists moved from traditional vs. structural vs. transformational grammar into new realms of revised transformational approaches, generative semantics, and a host of other candidate theories for more accurate description of language.

The term "functional grammar" and phrases such as "eclectic approaches" came to mean school grammars that selectively used concepts and terms from old and new grammars, always with a dual goal: (a) giving students information about the nature of language while (b) improving their speaking and writing. This double intention, deeply embedded in English programs in elementary and secondary schools, is crucial. As will be seen later, many teachers are claiming today that the first goal--knowledge of formal grammar--can actually hinder the goal of improving students' language skills.

The second goal was challenged in fundamental ways two decades ago and is being viewed in a new light today. To understand why anyone would attack the idea of improving communication skills, we must return briefly to some definitions and history. The fact is, improvement of students' language skills has historically meant extreme emphasis on one aspect of school grammar--namely, standard English usage. The term "standard English usage" refers to features of a particular dialect of English--namely, the spoken dialect generally shared by middle class speakers in America. The term will also be used here to refer to the conventions of writing represented in edited American English. In common parlance, standard English is what most people refer to as "good grammar" or "correct speaking and writing." See Wolfram and Christian (1979) for a lucid, more detailed explanation of dialects.

Few issues in American education divide the scholar from the general public more dramatically than that of standard English usage. Professional grammarians, working from a descriptive viewpoint, have discovered that nonstandard dialects of English have a coherence and order that is different from the coherence and order of standard English. For example, linguistic analysis has shown the interior logic and subtlety of use of the verb "be" in black dialect. The sentence "he bes my brother" does not follow the rules of subject/verb agreement and other uses of "be" in descriptions of standard English grammars; but it follows a systematic set of rules within the structure of black English. From a descriptive viewpoint, neither black nor standard English is "right." The two are merely different.

The dialect issue became most divisive during the neoprogressive movement of the late 1960s and early 1970s, when the descriptive viewpoint of the scholarly grammarian was used as part of a moral argument against the teaching of standard English usage. Since each dialect of English has its own structural integrity and is a sufficient vehicle for communication, the reformers argued, the imposition of standard English on all students through the schools is an unwarranted linguistic imperialism (Sledd, 1969).

The debate was often complex and usually bitter. At a 1966 convention session of the National Council of Teachers of English, a speaker recommended that the organization disband, because its work was essentially the oppression of linguistic minorities. But the most radical pro-dialect reformers eventually lost ground, for several reasons. First, it became clear that their moral position simply was not widely shared. Parents in nonstandard dialect-speaking communities generally wanted their children to have the opportunity to learn standard English usage. Second, the profession at large moved towards a better understanding of the descriptive viewpoint. Teachers held to their mission to teach prescriptively, but they moved towards (or were forced towards, as in the Ann Arbor, Michigan case) understanding student dialect variations. Instead of stigmatizing and trying to eradicate the language of the student's nurture, teachers presented standard usage as alternative language forms to be used in particular social situations.

This moderate view is consistent with the sociolinguistic concept of "communicative competence" (Rubin & Kantor, 1984)--that is, students should be given a large repertoire of language strategies and should know what kinds of language conventions are appropriate in various social situations. And because standard English is one important element in getting on in the marketplace, standard oral language and edited American English are an essential part of English instruction.

To summarize this section: scholarly grammars (traditional, structural, transformational, or others) have long been debated among professional grammarians. Simplified versions called school grammars (many of them eclectic or functional) have often reflected scholarly debate but have maintained the dual goals of teaching students about the structure of language (describing language) and improving their speaking and writing (prescribing how language can be better used). The latter goal has mainly emphasized one aspect of grammar, namely, teaching standard English usage. A major challenge to standard English usage instruction during the late 1960s and early 1970s was based on the idea that dialects of American English are equally valid. The point of equal linguistic validity can be (and among many teachers, has been) acknowledged, but the teaching of standard English has generally been reaffirmed on other grounds. Students must have communicative competence--ability to make use of different language styles in different social situations. Acquiring key aspects of standard English is a useful skill in many situations in our society.

Research in the Teaching of Grammar

This section will deal first with long-range research reviews on the question of whether formal grammar study helps to improve student writing. Then it will discuss recent research that throws new light on both the content and methods of teaching grammar and usage. The research review will include some of the implications of research findings for grammar instruction, and so it will set the stage for the final directions.

The long-range research reviews on grammar instruction in relation to writing improvement are both surprising and compelling. Typically, historical reviews of research are inconclusive. They are like a Rorschach that allows the researcher and the reader to take whatever meaning they like from the data. But independent reviews of 20th century research on the relationship between knowledge of formal grammar and writing skill were conducted by John Mellon and Steve Sherwin in 1969. Remarkably, neither found a single study that supports the idea that knowledge of formal definitions and rules of grammar will, in itself, improve student writing. The same conclusion was reached in the Braddock review of 1963. Another approach to analyzing research was taken by George Hillocks in 1986. Using the technique called meta-analysis (a quantitative method that differs from traditional research reviews), Hillocks found that formal grammar instruction was least effective as a means of improving writing when compared to instructional methods such as inquiry, study of writing models, and sentence combining.

Although Mellon's and Sherwin's reviews shocked the profession, they were consistent with other bodies of knowledge about how children learn. The theory and research of psychologist Jean Piaget suggest that the abstract terminology and complex relationships involved in school grammar study are beyond the conceptual range of most students. If Piaget's stages of development accurately reflect normal intellectual growth, we cannot expect the majority of elementary and high school students to grasp and assimilate into their writing dense concepts like *participial phrase*, *gerund*, and *nonrestrictive adjective clause*.

Research in language development has also revealed that by the age of five--which is to say, by kindergarten age--all normal children are already using participial phrases, gerunds, nonrestrictive adjective clauses, and almost every other syntactic structure that adult speakers use. Children do not, of course, use complex structures as frequently as adults, nor do they combine the structures in as many ways when they spin out ideas in oral or written language. Nevertheless, the basics of English sentence structure are within the repertoire of the child--learned through intuitive and informal means in the home and other presechool environments.

Given the undeniable skill and appetite for natural language learning demonstrated by small children; given the Piagetian backdrop which characterizes full abstract reasoning as beginning in the early teen years; and given a massive body of experimental research demonstrating that formal grammar instruction has not helped most students to write more skillfully, it is no wonder that longstanding commonsense notions about the need for formal grammar study have been challenged. The systematic prsentation of abstract information about language begins in school grammar programs around grade 3 and continues through grade 12. It appears that the net effect for most students is to make them feel powerless before the complexities of human language--before the very structures they learned without formal instruction as preschoolers and use in conversation on an everyday basis.

Small wonder, too, that the challenge is upsetting to many teachers. To begin with, the teaching of abstractions about language was the main technique that most teachers inherited for the teaching of oral and written language. Moreover, many English teachers were undoubtedly the exceptions--the individuals who enjoyed studying grammar and perhaps profited from it in our school years. Personal experience, however exceptional, seems powerfully generalizable to the individual. So we brought to the teaching of grammar more credence than was warranted.

Some comfort and some direction are provided by other pertinent research. For example, we now know that when students write they employ fewer nonstandard usages than when they speak, apparently sensing the need for more formal language. Students also sense the need for versatility in language when they change social environments. The range and number of nonstandard usages decreases as they go from the playground to the classroom. Finally, student writing samples on the National Assessment of Educational Progress tests show that the primary problems of student writing are far more basic than those of mastering standard usage and mechanics. Rather, students have difficulty developing their ideas logically and making connections between ideas in ways that reflect clear thinking and communicate intended meanings. Aside from the fact that expansive school grammar programs are intimidatingly abstract, then such programs fail to focus on specific student usage problems and distract us from the core problem of writing as coherent development of ideas.

If formal grammar study has not significantly helped students to write, why study grammar at all? Two quite different arguments for formal grammar instruction remain. The first is that students should learn grammar even if it does not improve their speaking and writing. Every educated adult should know the parts of speech and the basic array of structures that constitute the sentences of the English language.

The argument is reasonable in terms of general education, but it does not justify the teaching of grammatical terms and structures beginning in elementary grades and continuing through college. Grammar as a liberal arts study is similar to, say, the study of music appreciation through analysis of basic musical forms, structural elements, and theory. The difference is that we do not embed analytical study of music into the K-12 curriculum, nor do we expect that knowledge about musical forms, structure, and theory will be the primary element in improving musical performance.

Arguably, liberal arts units of instruction in the nature of language and the structure of English might be included in grades 11 or 12. Even stronger reasons exist for language courses at the college level, where students who have matured sufficiently to deal with abstractions might gain a deeper understanding of language. And certainly the general education of prospective elementary and high school teachers should include the study of language. Intensive study of one or more formal systems of grammar should be a requirement for English and language arts specialists (Wolfe, 1986).

A second rationale for some study of grammatical terminology is the "common vocabulary" argument. It seems both counterintuitive and dogmatic to insist that *no* terminologies be used in the discussion of student writing. There are degrees of abstraction in formal grammar, and the use of simple terminology seems helpful at the high school level in straightforward discussion of concepts like active and passive verbs, lack of pronoun reference, and tense shift. The unsolved problem of pedagogy and research is this: *how to find a manageable array of terms for a common vocabulary without moving towards annual coverage of innumerable abstractions*. The problem with functional grammars and eclectic approaches was that they tended to stretch into full-fledged alternative versions of school grammars, embracing expansive and intensive conceptual study. The determination of what is truly functional was blurred by the teachers' aesthetic sense of grammar as a system; so students have been plunged again and again into "common vocabularies" of uncommon difficulty. (The question of the role of information in the English curriculum will be discussed under the heading "Content of the English Curriculum.")

How Should Grammar be Taught in the Future?

Up to this point, the focus has been on the primary importance of teaching students to speak and write more effectively. The weight of theory, research, and the common experience of English teachers is heavily against school grammar programs that are conceived as extensive teaching of information *about* language. One could hedge a bit on this statement in wondering about the need for a common vocabulary--something far less than another school version of a grammatical system, but use of some terminology to furnish an information base and conceptual glue for other kinds of instruction. So far the other kinds of instruction have only been hinted at, so this section will focus on possible future directions for the teaching of grammar. The views presented here are just one research-based outlook, of course. If interpretations of research are an invitation to controversy, then extrapolations are risky business. Still, the inventive leap from theory and research to practice must be made. What follows is an effort in that direction.

In general, grammar instruction in the future should take place within classrooms that are active language environments. If research tells us that it is unproductive to ask students to sit at their desks quietly labeling sentence parts, common sense tells us that language growth will come only when students are actively giving shape to their thoughts through oral and written language. An active language environment is a setting or context for significant learning of many aspects of grammar, from standard English dialect to punctuating various kinds of structures within sentences.

Role-playing activities are an attractive way of placing usage study within an active classroom environment. When students imaginatively place themselves in the roles of individuals from various aspects of society--school principals, store clerks, parents, personnel directors, peers, small children, and others--they make use of their own growing communicative competence, their sense of how different people use different kinds of language in various settings. Discussion of language choices can follow the role-playing activities. For example, if students use slang expressions or nonstandard verb forms during a mock job interview and while role-playing a conversation with a younger brother or sister, the class critique can be directed towards the proper settings for formal and informal language. Discussion of dialects in literary selections is another way of making students aware of the social implications of language styles.

Attending to grammar concerns within writing process instruction is a major development in contemporary English programs. It is no accident that "proofreading"--making corrections in usage, capitalization, mechanics, and so on--is a later step in writing process models of instruction. In the model below (Suhor, 1983), note that purpose and audience are contexts that govern the entire process, and student interaction occurs at various points in pre-writing and revision.

Grammatical and usage-related points are often among those raised in the revision stage as well. The teacher (or other students) might say, "All of your sentences are short and choppy in that paragraph. Would it read more smoothly if you combined some of them?" "Isn't your last sentence in a different tense from the ones before it?" "I can't tell where you're using the character's exact words. Where do you want to put quotation marks?"

This is not to say that incidental mention of grammatical concerns will effect solid learning of sentence variety, tense, or quotation marks. Additionally, the teacher's observation of students' actual oral and written language forms the basis for diagnostic and prescriptive instruction. For

Table III-1

STAGES IN WRITING PROCESS INSTRUCTION

P	Prewriting	Drafting	Revising	Proofreading	Product	A
U R P O S E	--Brainstorming --Discussion (with peers and teachers)--refining and organizing ideas --Note-taking during the above --Sample essays	--With the benefit of previous thought, talk, notes, activities	--With feedback--peer reaction, teacher reaction, self-assessment	--Mechanics, spelling, etc.		U D I E N C E

instance, it is clear that in any given 10th grade class, every student will not need to go through sentence drills on 10 or 12 uses of the comma. By observing students' writings, the teacher identifies problems that merit general attention, those to be worked on by small groups of students, and those requiring individual attention. Specific drills can be prescribed for students who show particular needs, without making the study of grammatical and compositional terms and rules the center of the English program.

An approach to teaching sentence structures while bypassing the abstractions of formal grammar was developed in the early 1970s. In sentence combining, students actually work with and operate on sentences to create varied structures without learning terminologies. Although based largely on out-of-context exercises and derived from complex transformational grammar theory, sentence combining is a simple technique. It draws directly on the student's innate sense of how language works. It demonstrates that students need not know, definitionally, what a participial phrase or nonrestrictive adjective clause is in order to create such structures. Most important, students who do sentence-combining drills and exercises incorporate varied sentence elements more frequently and more richly into their writing. Sentence combining has been widely researched in the last decade at all educational levels, with overwhelmingly positive results (Strong, in press).

The matter of teaching by drill warrants some frank attention here. Unhappiness with grammar-centered, drill-oriented language programs has resulted in a total opposition to drill and practice among some English specialists. Resistance to drill is understandable in light of the historical overuse of drill sheets, workbooks, fill-in-the-blank exercises, and compendious grammar handbooks. But the anti-drill position is too often held with the force of ideology. "Mindless" becomes the automatic adjective for drills, with no acknowledgment of the utility of diagnostic/prescriptive approaches or sentence-combining instruction. Powerful positive research on error diagnosis in the tradition of Shaughnessy(1977) and on sentence combining is dismissed either because of a priori assumptions about the effectiveness of whole language learning or because of unresolved questions such as longevity of effect. Parallels to out-of-context drills in other areas (such as music and athletics) are ignored in the ideological commitment to learning in natural settings.

The present state of knowledge about ways of teaching of grammar, then, points to directions that will please neither those who advocate extensive grammar instruction nor those who are doctrinally opposed to drill. Far less information is needed in the English program than was formerly supposed; and varied language activities, linked with process instruction and geared to students' needs, constitute the best applications of scholarly knowledge to classroom grammar instruction. Of course, grammar is but one part of the discipline of English. A larger question is what constitutes the range of the content area and how content relates to process.

Content of the English Curriculum

Every few years, English specialists ask themselves "What is English?" The question is not a frivolous one but a sign of continuing self-criticism and an acknowledgment of change. Questions of identity are in fact common in various subject areas, from physical education to ecology (or is it from "movement science" to "environmental studies"?). In discussions of English instruction, there is a great temptation to bypass questions of content and talk only about methodology or learning processes. This exploration deals with connections between content and processes, but it focuses mainly on the "English" in "English instruction."

English as Content (Knowing) and as Process (Doing)

Advocates of process-based instruction might argue that the question "What is the content of English?" is loaded to begin with, and perhaps unanswerable as stated. They hold that English is not a content subject to begin with, but a process subject. English is not essentially something students learn about, but something they do. The old model of English as a tripod--with mutually supporting and converging "legs" consisting of literature, composition, and grammar (Figure III-1)--fails to make this process-content distinction.

Literature and grammar are indeed substantive content areas--relatively definable bodies of scholarly knowledge--while composition is predominantly a process, or some might say a developmental skill. So the truer theoretical representation would be a "bipod" of two substantive legs with a composition component somehow nailed on (Figure III-2).

Of course, that is a pretty shaky visual model. And in fact, English curricula which treat composition as an adjunct to grammar and literature are not very serviceable. As was noted earlier in this chapter, there is slim justification for teaching grammar as a body of knowledge if a main goal of the English program is to improve oral and written language performance of elementary and high school students.

It helps a little, but not much, to substitute "language" for "grammar" on the tripod. The result then is that literature is the sole content area, with language and composition as processes to be tagged on somehow. Literature-centered English programs are often imbalanced in precisely that way. Students are limited to speaking and writing about vicarious experiences. The personal experiences of the students, and the potential of language for helping them organize and understand those experiences, are neglected. The visual analog for such a program, terrible to contemplate, might be a literature "unipod," with splinters or some such to represent the particular skills and information needed for improving oral and written language. Obviously, the whole tripod metaphor gets out of hand here; let us go on to something else.

A view of English that favors process instruction is the idea of the four language arts--listening, speaking, reading, and writing. But this

FIGURE 2

English as a Bipod

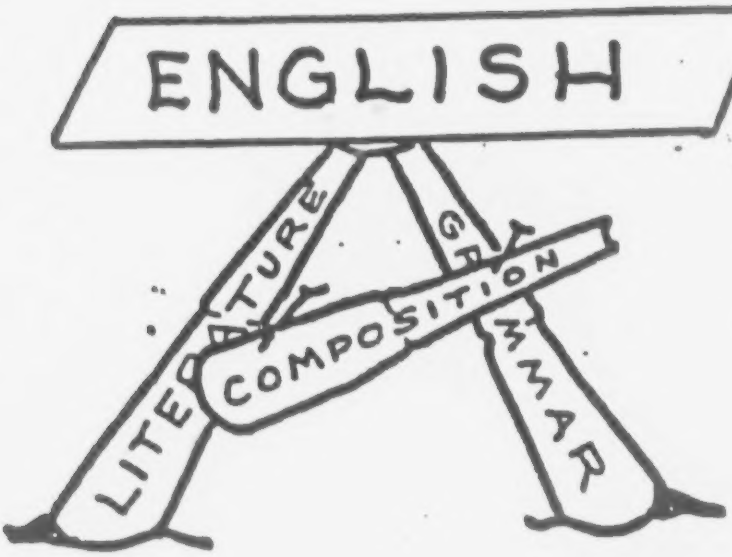
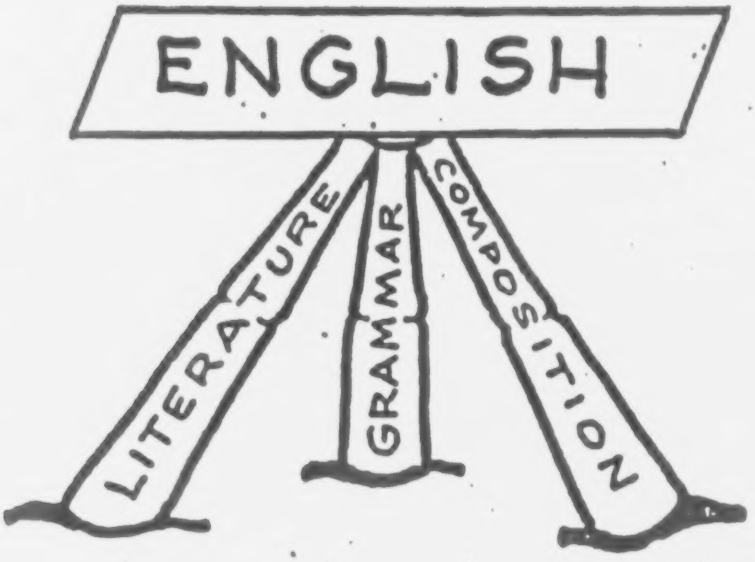

ENGLISH
LITERATURE
GRAMMAR
COMPOSITION

FIGURE 1

English as a Tripod


ENGLISH
LITERATURE
GRAMMAR
COMPOSITION

processed-based conception, in itself, provides few clues to content. What are the students listening to? What should they be speaking and writing about? And what in the world are they reading? It is too easy to waffle on these questions by emphasizing process and saying that the content of English need not be specified as long as the processes are being nurtured.

Traditionalists do not find questions of content--i.e., of that-which-is-to-be-processed--hard to answer. There is an acknowledged core of great literature, they say, from works for children to adult classics. There are universal themes and important issues and values that can be identified as central to the human condition. Such matters are certainly worthy subjects for listening, speaking, reading, and writing. We need only look to the best in our cultural heritage and then find appropriate places for this content in the English curriculum, K-12. Advocates of a classical curriculum believe that every normal child can succeed in a rigorous, more or less standardized curriculum if English teachers are knowledgeable in their disciplines and sufficiently willing to engage students in intellectual discourse.

Of course, there is more complexity in process views and traditional views of curriculum than there is space to describe here. Since the approach here to delineating content will be quite different, it is recommended that readers interested in classical curricula read works by Adler (1982), Fancher (1984), and Hirsch (1985). For an essentially process-based program fleshed out in terms terms of sample content and appropriate methodology, see Moffett and Wagner (1983).

Content of the Literature Program

Discussion of content of the English curriculum begins with literature, partly because it is the one area in which there is almost unanimous agreement on two points: (a) it is a body of knowledge--i.e., a content area; and (b) literatures as content has a place in the English curriculum. Composition, language, and other matters will be discussed later. The model in Figure III-3 represents all literature that I believe should be eligible for inclusion in the English language arts curriculum.

"Literature" is defined broadly here to include magazines as well as books; expository writing as well as poetry, the novel, drama, and the other genres usually called "creative." Some commonsense exclusions from literature that is eligible for school programs are in order--e.g., expository writings such as corporation reports to stockholders (and most other adult technical documents); pornography outright, in whatever literary medium. There is not sufficient space in this essay to explore interesting questions such as the nature of literary genres or the boundaries of pornography. Suffice it to say that in outline, the universe of school literature should include a wide range of literature for children, young adults, and adults in a variety of print formats.

As the dotted lines suggest, distinctions between the literatures noted in Figure III-3's model are by no means absolute. Robert Cormier's excellent story, "Guess What? I Almost Kissed My Father Last Night," can be read with interest by adults and teenagers alike. Saint Exupéry's "The Little Prince" and Shel Silverstein's poetry cut across all age levels.

Few would quarrel with such an analysis. Questions of the quality of works eligible for inclusion in English curricula are more difficult. The expanded model (Figure III-4) deals with qualitative questions by placing popular literature within the program (upper left quadrant) along with great classical and contemporary literature (upper right quadrant) and the average-quality literature (bottom half) that comprises most of the works from which teachers and textbook writers might normally select materials for study.

The division into segments in Figure III-4 is not intended to represent recommended proportions of popular, average, and great literature in the English curriculum. The essential point is that materials representing a wide range of quality should be eligible for inclusion in literature programs and available to English teachers. Later it will be argued that different students will require different selections from the total pool of eligible kinds of literature and from literatures of varying quality.

Neither specialists nor laypersons have problems in distinguishing between materials in the upper quadrants of the model, i.e., between the worst and the best. We instantly recognize differences between a pulp magazine love story and Wuthering Heights; hence, the solid line between popular literature and great classical and contemporary literature. Things are less clear, though, at the other borderlines of quality. Most Gothic romance series and popular astrology books are surely in the popular category, but a potboiler novelist or a playwright like Neil Simon will straddle the line between fluff and good literature. Similarly, the line between good and great literature is highly debatable. It might be said that Hemingway's A Farewell to Arms is a great novel, but For Whom the Bell Tolls is merely excellent. English teachers would argue about all of these borderline categorizations, but that is the point. The lines of demarcation will be fuzzy in many judgments about quality.

Even after acknowledging such ambiguities, though, most teachers would agree that some great works drawn from children's literature, young adult literature, and adult literature should be part of every K-12 English curriculum. Most would also acknowledge the necessity of drawing from a wide pool of average-to-good literature. The real controversies are centered on two ideas: (a) the belief that popular literature--from pop/rock lyrics to flimsy adolescent novels to gimmicky chose-your-own-plot adventure books--can play a useful role in school programs; and (b) the notion that literature study should essentially be the study of great works. These questions will be dealt with as problems of cultivation and carryover. A solution may lie in connecting the world of the student with the world of ideas.

Popular literature was in greatest vogue in our schools during the neoprogressive movement of the late 1960s and early 1970s. The buzzword "relevancy" was often invoked uncritically to sweep vast amounts of bad popular literature into English classes. The reading of trivial materials

FIGURE 3

Literature for the English Language Arts Curriculum

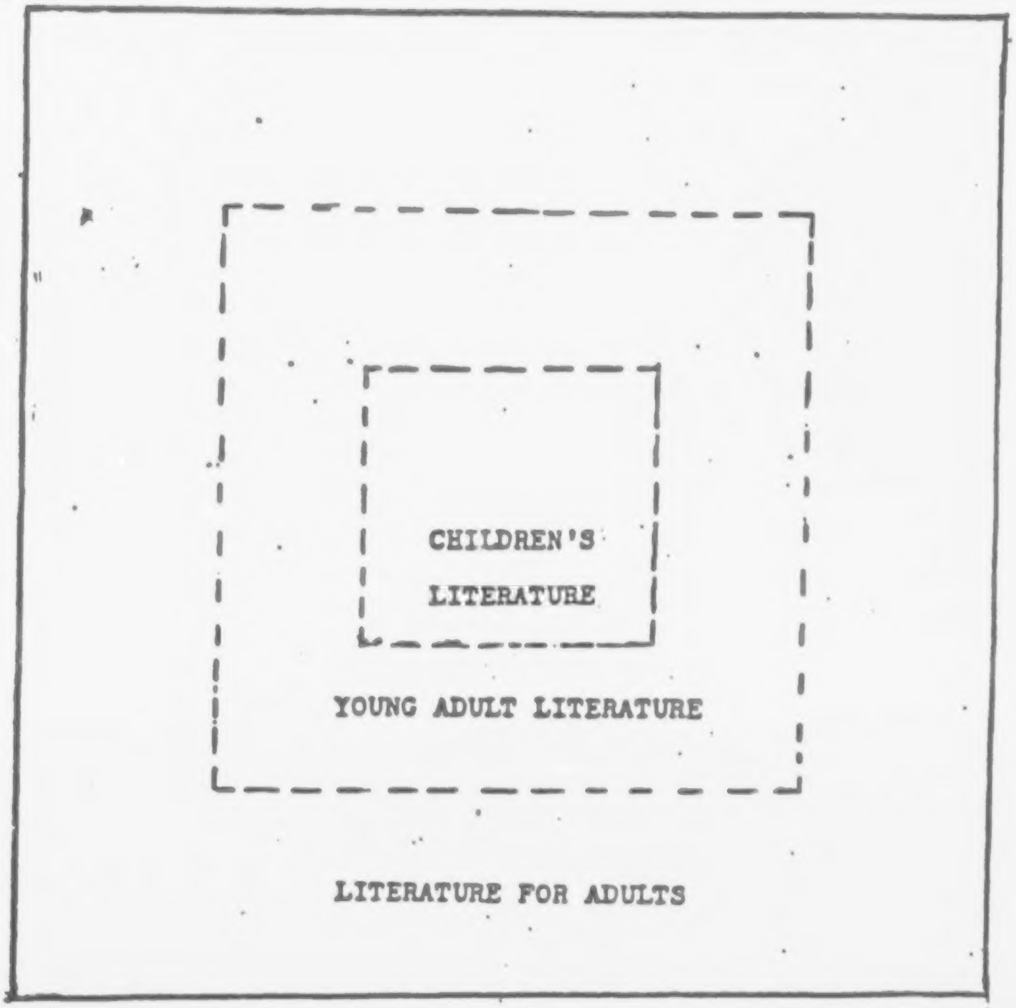
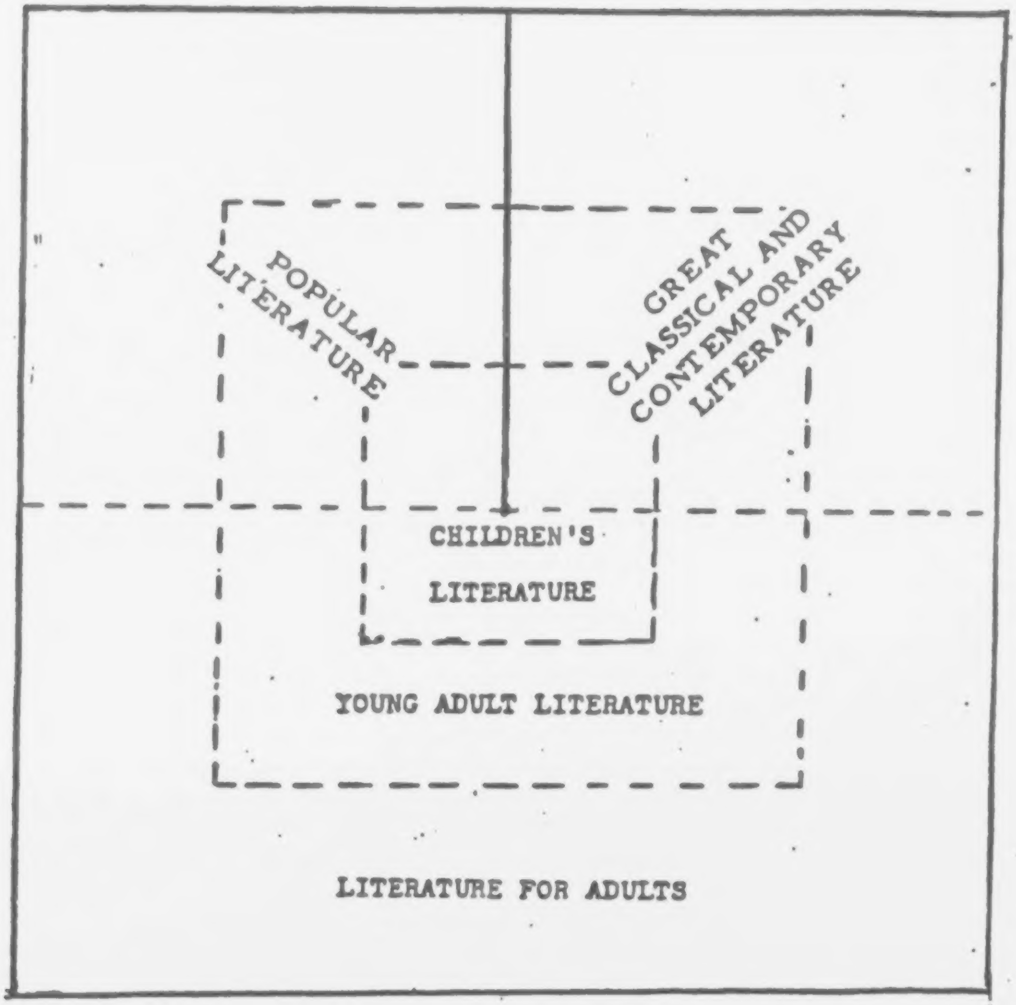

CHILDREN'S
LITERATURE
YOUNG ADULT LITERATURE
LITERATURE FOR ADULTS

FIGURE 4

Quality of Literary Works for English Curricula


POPULAR LITERATURE
GREAT CLASSICAL AND CONTEMPORARY LITERATURE
CHILDREN'S LITERATURE
YOUNG ADULT LITERATURE
LITERATURE FOR ADULTS

became common, even normative, as educational programs catered to the undeveloped tastes of students. The goal of cultivating students' responses to literature was frequently ignored.

At the other end of the scale, literature programs that draw predominantly on classics and other excellent works do indeed assure that students will have a certain amount of exposure to important works. But these programs rarely succeed in making students into lifelong readers of fine literature. Even when standard works like Silas Marner, Julius Caesar, and David Copperfield are brilliantly taught, most students are not inspired to go out and read, on their own, The Mill on the Floss, King Lear, and Bleak House. The essential element of carryover into personal reading simply has not been effected in the classics-based program.

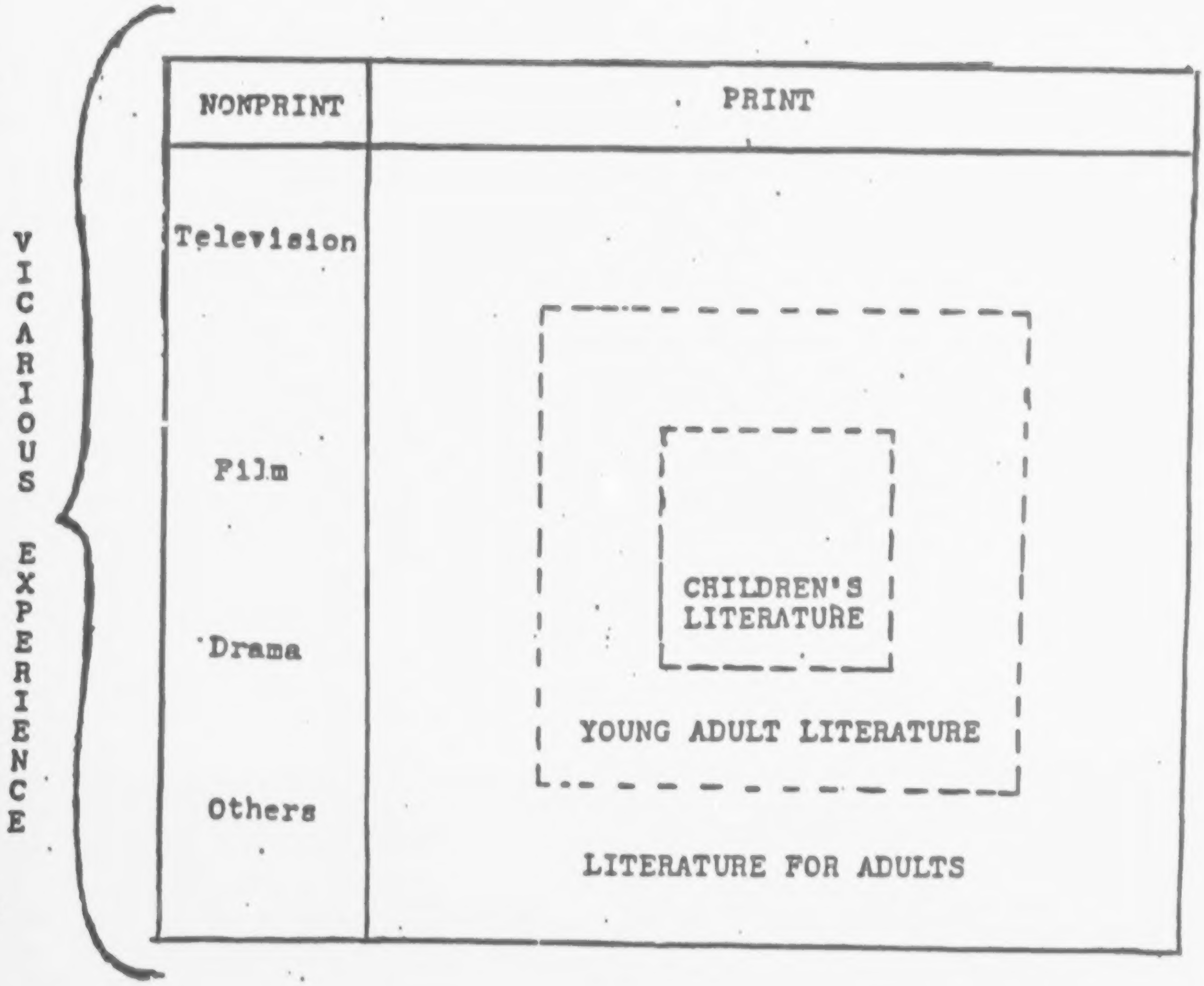
What kind of literature program reckons with the need for cultivation and carryover? The term "cultivation" is relative, implying a nurturing process in which students' intellectual and emotional responses are advanced methodically, in accordance with their present state of growth. If cultivation is to go beyond mere exposure to culture, the teacher must find vital points of connection between the personal world of the student and the larger world of vicarious experience. For tens of thousands of reluctant readers, teen romances or adventure paperbacks are potentially the first point of personal engagement with printed-word narratives. Happily, many other students will enter the world of ideas through more richly organized works such as the poetry of May Swenson or the novels of Paul Zindel. A few come to school with the readiness to devour the great works that we wish everyone could read with relish. The literature program suggested in Figure III-4 permits teachers to seek out, for each student, a door into the world of ideas that the student will willingly enter. It includes exposure to some great works--presumably, those most accessible to contemporary students--but provides a usable framework for connections and carryover.

Cultivation must be consciously pursued if the teacher is to avoid simply running in place with students' present reading habits. To carry the litany of "C's" one step further, a "cut-above" strategy is necessary. That is, students who enjoy sports magazines can be led to read materials that are a cut above their present tastes--simple short stories and poems about athletes. From there, the connection can be made to biographies and autobiographies like those of Wilma Rudolph, and a knowledgeable teacher can then engineer the move to excellent works like Shaw's "The Eighty-Yard Run" or Malamud's The Natural. When the level of engagement is high,the chances of carryover into lifelong reading are much greater. Moreover, the teacher need not neglect the traditions of literary study during the nurturing process. Concepts such as setting, characterization, and plot development can be learned through the study of young adult literature as well as through classic works.

Obviously, a K-12 literature program geared towards student growth will not include a forced march through a set canon of works which every student must read at any given grade level. The teacher must in fact be familiar with a wide range of literature, from classics to currently popular materials. Equally important, the teacher must have the freedom and the insight to apply

FIGURE 5

Print and Nonprint Vicarious Experience


VICARIOUS EXPERIENCE
NONPRINT
PRINT
Television
Film
Drama
Others
CHILDREN'S LITERATURE
YOUNG ADULT LITERATURE
LITERATURE FOR ADULTS

that knowledge in connecting the student with appropriate works, in further cultivating the student's responses, and in encouraging carryover into lifelong reading habits by suggesting materials for leisure reading.

Earlier, literature was referred to as "vicarious experience"--that is experience acquired not by direct interaction with the world but by imaginative entry into worlds created by others. Unfortunately, students today have their most frequent vicarious experiences not through print but through nonprint media--especially television, film, and popular song lyrics.

There is nothing inherently shabby in nonprint vicarious experiences. Some of the greatest expressions of the human spirit, from ancient times to the present, have been achieved through the medium of drama--and of course, drama is a long-established part of the English program. But in America we are besieged and benumbed by television, and vicarious experiences of a low quality are transmitted into our homes on a daily basis.

Nevertheless, both print and nonprint vicarious experiences are included in Figure III-5's diagram of the content of the English curriculum. This is not to say that everything on televisior or every film is or should be an object of study. Again, the question is what should be eligible for inclusion. And nonprint media are included because the English teacher has an important stake in guiding students' understanding of the imaginative worlds presented in nonprint media.

It was suggested earlier that many nonprint materials have important points in common with established aspects of the literature program. Television sitcoms and feature films have some structural qualities that are found with drama, short stories, and novels. Popular songs have elements in common with folk ballads and lyric poetry. To some extent, similar tools of analysis can be applied to a TV drama, a film, and a narrative in print.

Granted, a great deal of deserved contempt has been heaped upon commercial television. But in complaining about the ill effects of TV on children, educators have largely ignored the potential for making positive use of its many flaws and few virtues. To begin with, reluctant readers are seldom reluctant viewers. A common experience exists for cultivation of taste through critical discussion and analysis. Lehr (1986) has summarized some of the complexities not usually recognized in discussions of the effects of television, noting that numerous possibilities for creative critiques of television have ben insufficiently explored. Teachers might conduct in-class critical comparisons and analyses of popular shows; provide advance preparation for high quality TV dramas; link popular television shows with popular literature that is a cut above the TV experience; apply appropriate terms from literary analysis in discussing television; and teach about stereotypes, slanted observation and reporting, sound inference, and logical argumentation. The student who comes to realize that characterization and exploration of issues in, say, Cagney and Lacey, are more subtle than those elements in stock TV detective shows is better prepared to discuss character and theme in short stories by Hemingway and O. Henry. Facile discussions about the narcotic effects of television overlook the development of a productive critique of television within the English curriculum.

Personal Experience as Content

The content of the English curriculum was earlier described as " that which is to be processed." The view of literary content presented above differs from many traditional views in the acknowledgment of a wide qualitative range and in the inclusion of nonprint media as part of the student's vicarious experiences. A point was also made about connecting literature with the student's personal experiences: if class discussion and writing focus wholly on literary experiences, the links between literature and the life experiences of the student are neglected. Of equal importance is the fact that the student's personal experiences can take on meaning through oral and written language in the classroom, even when those experiences are not linked with iterature. It seems to follow, then, that much of the student's store of personal experience is part of "that which is to be processed"--part of the content of the English program (Figure III-6).

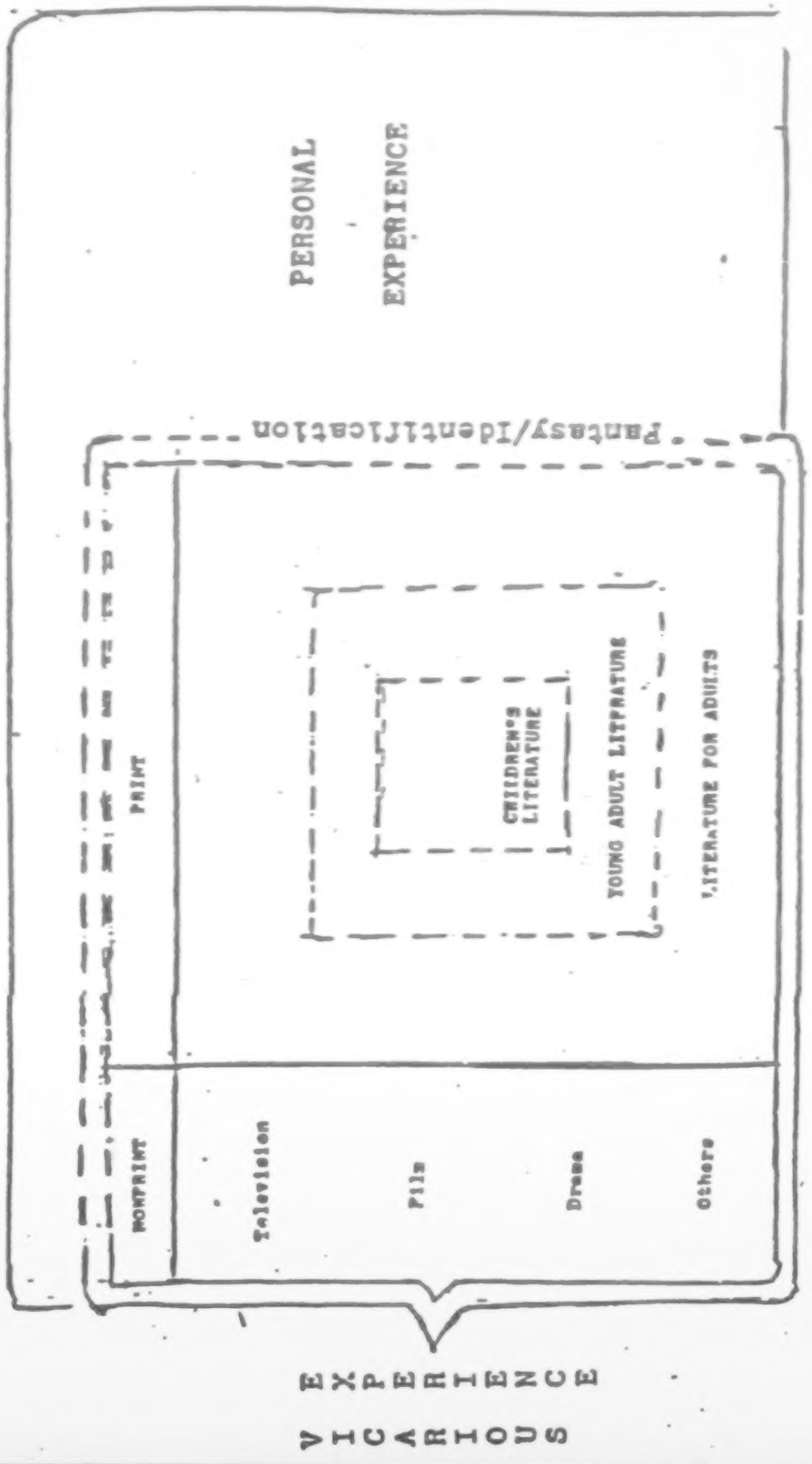
To some extent, Figure III-6 depicts processes as well as content. The dotted lines between personal and vicarious experiences suggest a constant interaction between reader and text (Rosenblatt, 1978). "Fantasy" and "identification" are depicted as mental processes vitally linked with vicarious experience. Fantasy is a kind of internal vicarious event through which we imagine ourselves doing things we have not yet done, might do, or indeed cannot do. Identification is a process through which we enter into print and nonprint vicarious experiences. We connect ourselves with the imagined people and events and with the ideas and feelings presented in stories, essays, poems, films, and the like.

Figure III-6 suggests, then, that vicarious experiences can be processed as objects of study and also in relation to students' personal experiences. Students enter imaginatively into the authors' worlds for purposes ranging from analysis to sheer entertainment to the testing of their sense of reality. But Figure III-6 advances the broader point that student' personal experiences are themselves an important part of the content of English. Through the processes of speaking and writing in the classroom, students give clearer shape to the unexamined experiences in their own lives, and they assign significance to those experiences in the very act of processing them. "Connecting" comes to play in a new sense here. Not only are students linked with the minds and emotions of authors; they are also put in touch with their own ideas and feelings, because the processing of personal experiences through language gives clearer form to their impressions of the world.

This is not to say that every private cranny of the student's life and personal values should be drawn out in the classroom and made explicit through discussion and writing. But English is clearly the subject area in which major responsibility is assigned for helping students to be effective users of language. In the English classroom, the process of exploring and clarifying thoughts and feelings through language must be practiced and modeled so that students can become articulate both in interpreting vicarious experience and in expressing their inner states.

FIGURE 6

Role of Students' Personal Experience


PERSONAL
EXPERIENCE
Fantasy/Identification
NONPRINT
PRINT
Television
Film
Drama
Others
CHILDREN'S LITERATURE
YOUNG ADULT LITERATURE
LITERATURE FOR ADULTS
VICARIOUS
EXPERIENCE

Information as Content

Information was overplayed in English curricula of the past. Students were expected to know (i.e., memorize) information about authors' lives, particular works, literary movements, figures of speech, metric patterns, and so on. The questions in textbooks after literary selections rarely stressed higher order thinking skills or dealt with students' responses to characters and events in a work. As noted before, information about grammar was incorrectly thought to be essential to improvement of speaking and writing. Definitions and terminologies--from diphthongs to absolute phrases to nonrestrictive clauses--abounded in school grammar programs. Language textbooks, far from encouraging students to actually use language, were filled with definitions and follow-up drills that required identifying sentence parts and filling in blanks.

Reactions against such programs have justifiably resulted in emphasis on engaging students in actual processes of language-making. Yet it is clear that some information is essential, both in the study of literature as content and in the effective implementation of process-based instruction. Figure III-7 completes the graphic depiction of the content of English by acknowledging the place of information in English curricula.

The final model suggests that students need information in order to discuss initially, and to gain deeper understanding of, their personal and vicarious experiences. Also, information can be often taught through Socratic questioning rather than through assignment for memorization. Many literary concepts--e.g., narrative/lyric poetry, interior monologue, and point of view--are especially teachable through teacher-led inductive and deductive discussion. Certain concepts related to process instruction in oral and written language can also be taught Socratically--e.g., transitional phrases, use of active/passive verbs, and methods of developing a point of argument.

But surely some information is taught most economically through direct methods. For example, the inductive teaching of metric patterns in poetry or a Socratic approach to studying the rules for quotation marks might be needlessly protracted, and ultimately unrewarding for both teacher and student.

In this model, information is primarily a tool rather than an end in itself. As an aspect of content, information is important insofar as it either (a) helps teachers and students talk more readily about other aspects of content, or (b) makes discussion and implementation of processes easier and more fluid. Graphically, information underlies the English program and is not at the center of it. It is a relatively small yet essential support system for the exploration of personal and vicarious experiences through language.

Those who would banish information from the English curriculum, like those who would outlaw drill, take their positions ideologically. There is no research basis for doing so. But they are in part reacting against a sad history of factmongering in English curricula in elementary and secondary schools. Teachers and curriculum developers should indeed guard against the

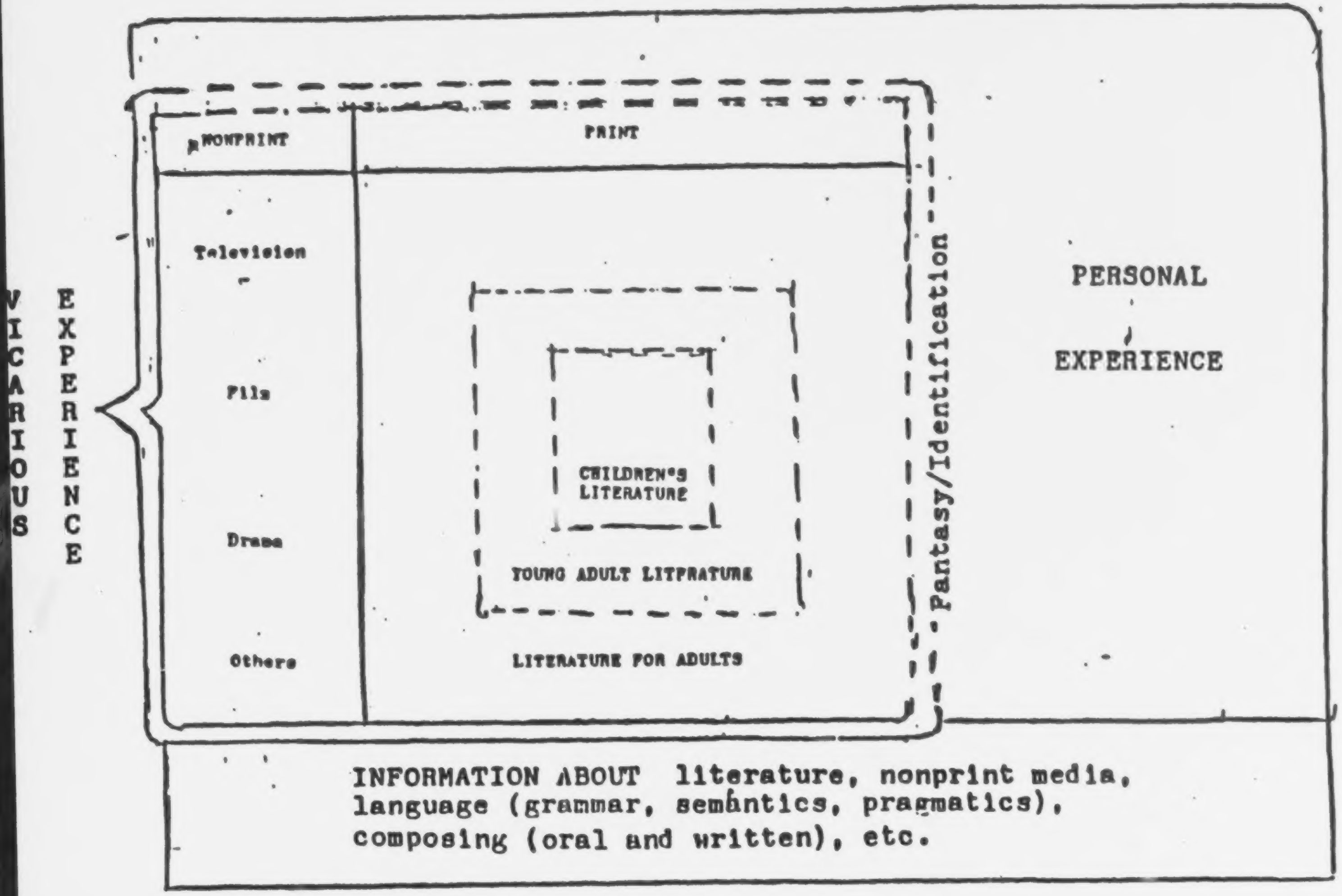

VICARIOUS EXPERIENCE
NONPRINT
PRINT
Television
Film
Drama
Others
CHILDREN'S LITERATURE
YOUNG ADULT LITERATURE
LITERATURE FOR ADULTS
Fantasy/Identification
PERSONAL EXPERIENCE
INFORMATION ABOUT literature, nonprint media, language (grammar, semantics, pragmatics), composing (oral and written), etc.

FIGURE 7

The Place of Information in English Curricula persisting instinct to consider English as a conglomerate of interesting facts about literature, grammar, and composition.

Conclusion

This chapter has presented a view of the content of the English curriculum but it must conclude with a reaffirmation of the process-content relationship. Its view of content, especially the dimension of personal experience, does not make sense unless content is understood in relation to process. Again, the content of English is "that which is to be processed."

English as a subject has identifiable content, but the goals of K-12 instruction require the selection of appropriate materials and the processing of those materials via oral and written language. Dixon (1967) sees English as the ordering of personal and vicarious experience through language. Information is an essential but limited tool in the study of English. Within a far narrower range than was previously thought--a range that still lacks precise definition--there is a body of information that can illuminate content and lubricate process instruction in English. By contrast, the range of usable content in the literature program is wider than was once specified, embracing study of some great works but emphasizing literary experiences that will engage student's interests, cultivate their responses, and promote habits of lifelong reading.

The central job of the English teacher is to induce from students language that helps them to shape and give meaning to their personal experiences and the experiences of others--others whom they meet in the real world and in the imagined worlds of literature. It follows that the test of student growth in English can never be reduced to demonstrating knowledge of content. Students "know English" only when they "do" English well--stating significant ideas clearly in discussions, writing with verve and grace, reading with insight and enjoyment. Finally, students "do" English well when they carry these processes beyond the classroom and continue to grapple with more complex materials and ideas. Ultimately, the English curriculum is successful only when students read, speak, and write well in the worlds they inhabit subsequent to their K-12 educational experiences.

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IMPROVING SCHOOL EFFECTIVENESS THROUGH REFORM OF TEACHER SELECTION PRACTICES AND COLLEGIAL OBSERVATION OF CLASSROOM PERFORMANCE

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Quality teaching is the goal common to all efforts to reform the nation's school systems. Two issues that bear directly on the proficiency of teachers deserve more attention by policy-makers and educators alike. If teacher selection practices are as flawed as some recent studies suggest, school districts may not be able to benefit from current efforts to upgrade teacher training. Other studies have found that the supervision teachers receive from principals falls far short of what is necessary to improve teachers' performance. School systems can make up for this deficiency in part by having teachers observe one another's classrooms. A theme common to both issues is that the key to attracting and retaining capable people to teaching lies in a transformation of teachers' work environment--replacing the bureaucratic model of schooling with the professional model.

Teacher Competency Begins with Teacher Selection: Attracting Achievers and Leaders to the Teaching Profession

Because the quality of education is largely determined by teachers, the issue of teacher competency is at center stage of all attempts to improve education. The quality of this nation's teacher corps is shaped by those who major in education, those who are hired, and those who stay in the profession. At every stage in the preparation, selection, and retention of teachers, the issue of competency surfaces.

Yet recommendations for reform are often simplistic, customarily focusing only on teacher preparation and higher admission standards at teacher training institutions. Although the training and skills of prospective teachers are of obvious importance, improving teacher training is only a partial solution. After individuals are trained and their skills verified, school districts must then select the best candidates to become teachers. If districts, for whatever reason, bypass the best candidates in favor of the mediocre, even the best efforts of teacher training institutions will be for naught.

This section of the chapter summarizes pioneering studies that have examined the teacher selection process in school districts. It also explores support systems for beginning teachers and the role of school organizational structures in encouraging capable young teachers to remain in the profession.

The Lower Academic Performance of Education Majors

Statistics about who goes into teaching are familiar to educators and laymen alike. College students who major in education are, as a group, less academically able than most other college students. Between 1972 and 1982, the Scholastic Aptitude Test scores of students who indicated a preference for teaching declined more steeply than did the national overall scores. Graduate Record Examination scores of education majors declined significantly between 1970 and 1982 (Kerr, 1983). The average cumulative grade point average (GPA) of education majors was lower than that of non-education majors--2.72 compared to 2.97 (Sykes, 1983).

The trend is not a recent one. Historically, education majors as a group have ranked low compared to other students on measures of academic ability and achievement. Sykes (1983) reports that as early as 1928 standardized test scores for students in education were lower than for those in any other college major. Between 1951 and 1953, education majors scored lowest among the men who took the Selective Service Qualifying Test, an examination of both verbal and qualitative ability. Perhaps little has changed except the amount of public attention drawn to the qualifications of potential teachers, which has undeniably increased.

The quality of teacher training institutions has come under increasing public scrutiny. Commentators have questioned both the admission standards of training programs and the rigor of the training itself. They encourage the institutions to recruit students with higher achievement records and to guarantee their graduates' basic skills competency, subject area mastery, and pedagogical prowess.

One would think that those teacher education graduates who have the "best" academic qualifications would have a distinct advantage in securing a teaching position. But could it be that in the midst of the rhetoric about the qualifications of student teachers and the quality of training institutions, school districts themselves do not seek the most academically talented graduates? Could school districts be contributing to the problem of teacher competency by failing to hire the most qualified candidates?

Are the Best Hired?

Recent studies support a hypothesis proposed by Weaver in 1979: methods used to select and place teachers do not result in more academically competent teachers being hired. In Weaver's study, subjects who had lower test scores on four out of five measures of competence in mathematics, reading, and vocabulary were more likely to be teaching than those who had higher test scores. Granted, the design of Weaver's study did not allow him to distinguish between those who did and those who did not actively seek teaching positions. In research designed to allow that discrimination, Perry (1981) found that the "best" candidates (as measured by their GPA, evaluation of their student teaching, and professional recommendations) were not favored in hiring. Neither were the "worst" favored. Therefore, Perry concluded that academic criteria apparently do not significantly affect the job-hunting experience of graduates.

One could predict that teacher selection would be most rigorous during periods of teacher surplus. Yet if the experience of the Dallas (Texas) School District is typical, a surplus of candidates is no guarantee that districts will hire those most academically qualified. Perry (1981) reports that in 1977--a "surplus" year in Dallas--55% of the newly hired teachers in the district failed a basic skills test whereas 36% of the total number of applicants failed. Deficiencies in the hiring process seemed to have actually favored those applicants who failed above those who earned higher scores.

In another study by Browne and Rankin (1986), superior cognitive skills did not predict employment as a teacher. No significant relation was found between scores on the National Teacher Examination and success in finding a job. In fact, being rated as "bright" by a college supervising teacher was negatively related to employment. Calling for further research into hiring processes, Browne and Rankin conclude that personality factors may be more important than knowledge in determining whether or not an applicant is selected.

Admittedly, these findings may not be generalizable; future studies should attempt replication in other settings. The selection of teachers has received little attention from either researchers or practitioners. Compared with other areas of educational research, studies of hiring practices are few, validation of procedures is minimal, recommendations for well-intentioned personnel directors are limited.

The task of improving selection is complicated by the fact that research on the prediction of teaching performance has failed to produce definite answers. Calculating the effects of grade point average and test scores upon teaching performance is a difficult task because of the restricted range of study: because the grades and scores of individuals admitted to and graduated from teacher preparation institutions tend to be homogeneous, correlations between academic performance and teaching performance are masked (Kahl, 1980). Nonetheless, some studies show significant links among grade point average, student teaching performance, and success as a beginning teacher (Bueker, 1972; Jenkins, 1977; Fratianni, 1979).

The question of a teacher's cognitive ability may not be raised in hiring interviews, but it certainly is raised in many procedures for the dismissal of incompetent teachers. During actual investigations of teachers dismissed for incompetency, supervisors noted the following teacher deficiencies: lack of skill and ability to perform instructional duties, weak intellectual ability, inadequate knowledge of subject matter, and poor judgment skills. Lack of motivation and emotional stability are less frequently cited causes of incompetence (Bridges, 1986).

The trend toward testing teachers represents one attempt to improve the competency of educators and to placate the public. Some states require passing scores on basic skills tests before admission to teachers' training; others mandate basic skills or pedagogical examinations prior to certification. In 12 states teachers are tested both before entering training institutions and before certification. The tests may screen out candidates with failing scores, but they are not intended as predictive instruments that would assist districts in identifying candidates with superior skills. Although the tests partially satisfy the demand for higher standards, they by no means completely resolve the teacher competency issue.

Methods of Teacher Selection

The process by which candidates are commonly selected for employment as teachers may explain in part why the academically "best" are not more likely to be hired. While administrators might agree that the hiring of teachers is one of their most important functions, they do not typically devote a significant amount of time, energy, and funds to recruit and select the most capable candidates. Most school districts do not have established policies for selection. Most school administrators appear to lack training in systems that would increase their odds in finding the best teacher (see, for example, Kahl, 1980 and Lewis, 1983).

Although the interview is widely considered the least reliable selection tool, it is the most frequently used. The average interview is conducted by untrained personnel and stands little chance of being a representative slice of the applicant's life, an accurate measure of teacher competence. Typically the interview is unstructured, lasts less than one hour, and is highly influenced by first impressions, appearance, nonverbal behavior, and conversational skills. Such unstructured interviews allow the applicant to offer a fictionalized version of himself or herself, responding in socially desirable ways to cues in the interviewers' questions or manner. Business has a term for it: the "old school tie syndrome," descriptive of the fact that interviewers tend to prefer applicants similar to themselves.

School principals have been shown to be attracted to teacher candidates whose attitudes are similar to their own. In fact, Merritt (1971) found that interviewers of prospective teachers were more swayed by the congruence of their and the candidates' attitudes than by the candidates' qualifications.

Perhaps the good schools get better and the poor schools continue to deteriorate. Uniform views about education and the school may produce an efficient staff, but how much weight should employers give to likemindedness relative to applicants' qualifications? To what extent should an effective school staff seek diversity among its members? Are teacher candidates selected because they in some way match the school's current quality? If so, strong schools get stronger, weak schools weaker.

Industrial employment recruiters who visit college campuses typically ask to see only those students who have GPA's above 3.0, who have held a position of leadership in a campus organization, and who have had successful job experience. In short, they look for achievers and leaders. And that assumes that GPA is related not only to ability, but also to work habits, determination, and accountability.

An increasingly accepted theory in industrial research contends that employees' general cognitive ability predicts their knowledge of a job and hence their performance in that job. The more complex the job, the more the generalization applies: higher ability workers are faster in cognitive operations on the job, better able to prioritize between conflicting rules, better able to adapt old procedures to new situations, and better able to learn new procedures quickly as the job changes over time (Hunter, 1983).

In contrast, school district employers may seek teachers recommended as enthusiastic, dependable, desirous of working hard, cooperative, and able to benefit from advice (Mortalani, 1974). Without denying their importance, one must ask how well those descriptors alone predict an applicant's ability to master the complex tasks of teaching--organization of curriculum, assessment of group and individual needs, interaction with parents and community. One must also ask whether "able to benefit from advice" is consistent with the perception of teachers as responsible professionals and as central participants in schools' decision-making process.

Unlike industry, school districts may not be looking for achievers and leaders. When superintendents in one midwestern state responded to this statement, "Candidates with GPA's from 2.5-3.5 are preferred to candidates with GPA's from 3.6-4.0," only 59% disagreed (Jarchow, 1981).

Let us not overstate the case. As Sisk (1969) says, it is personal and social characteristics that "make a teacher out of a scholar." After screening teacher candidates for cognitive ability and achievement, employers must appropriately seek signs of commitment, integrity, empathy, energy, and, yes, magic. Looking for the teacher-scholar means shedding some stereotypes, admitting that the English teacher can be equally concerned about Shakespeare and adolescents and that the first-grade teacher can enhance a child's linguistic prowess as well as his or her self-concept. Employers need not choose between academically qualified educators and compassionate, dedicated teachers. In fact, better qualified teachers are often more self-confident and more able to strengthen their school community than are other teachers.

Who Stays in Teaching

Improved hiring procedures alone will not guarantee the academic quality of the teacher workforce. That quality is influenced not only by who enters the teaching profession but by who stays. About 15% leave after their first year of teaching. An additional 10% leave in both the second and the third years, and after six years, a total of nearly 50% have left (Schlechty & Vance, 1981). Low pay and morale are the most frequently cited reasons for the high rate of attrition. Of course, turnover among newcomers is also high in other organizations: newcomers to industrial and educational settings often bring unrealistic expectations to the job, face isolation, and encounter a sink-or-swim philosophy.

Beginning teachers report receiving little coaching or support during their first years of employment, known as the induction period. When informal support is available, they perceive it as greater in value than formal support. Although the presence of support is not the determining factor in most beginning teachers' decisions to continue teaching or leave the profession, support is a contributing factor in those decisions (Isaacson, 1982; Clewitt, 1984).

Programs such as the mentor teacher project in California match new teachers with experienced, talented teachers. The structure of the mentor program combines formal and informal aspects: the beginning teacher has legitimate access to a colleague who can reduce the complexities the new job presents. From discussing the math curriculum to untangling the social expectations of the staff room, the mentor can be a sounding board for the newcomer's questions and concerns. In a related trend, several states propose to consider the first year of teaching as an internship, one that includes increased supervision of the beginning teacher by peers and administrators who provide helpful feedback.

Educators are at least as influenced as other workers to change jobs because of wage differences between their current and potential positions (Baugh & Stone, 1982). Teaching lacks "careerism"--a chance to advance in the profession without leaving the profession. Unlike the likelihood in other professions, in most states increased competency does not lead to positions of increased responsibility and compensation. Instead, minimal financial rewards are offered only for endurance.

Working conditions are also cited by teachers who leave education. Teachers in the higher ability ranges leave teaching in greater proportion than do those in the lower ability ranges. There seems to be a correlation: teachers of higher ability are more likely to attribute their discontent to their lack of input into decisions, inadequate resources for classrooms, restrictive controls, and inadequate leadership and support by school administrators (Darling-Hammond, 1984).

Recruiting and hiring the most capable teachers are clearly only the first steps in improving educational staffs. School systems must also provide support during the beginning teacher's induction period, accord more respect to teachers as accomplished professionals, and fashion compensation commensurate with new levels of career responsibility. Raising requirements for teacher candidates is not sufficient. Making the teaching profession and the school environment attractive to achievers and leaders is the more significant issue.

The Incompetent Teacher

The low status of the teaching profession is undeniably linked to the presence of incompetent teachers. Although they are estimated to comprise only five percent of the nation's teachers, the incompetent teachers gather a disproportionate share of public attention. Incompetent teachers inhibit students' learning, consume administrators' time, and tarnish the reputation of colleagues (Bridges, 1984, 1986).

Despite the damage done by incompetent members, teachers and administrators alike often ignore and protect the individual. Confronting the incompetent teacher, documenting deficiencies, and attempting remediation are time- and emotion-consuming actions. Programs of collegial support may well experience their severest testing when applied to the issue of the incompetent professional.

Dealing with incompetent educators provides a glimpse into how teachers may have to reconcile issues of collective bargaining and professional forms of governance. The dilemma of the teachers' unions, for example, is twofold: as professional organizations, the unions seek a reputation for promoting excellence, yet as representatives of all members, they owe each teacher fair representation. Most administrators say that the unions resolve the dilemma justly; they are a constructive force in evaluating the situation and advising the incompetent teacher to leave the profession (Bridges, 1986). Union leaders attempt to defend the teacher's right to due process without defending the teacher's deficiencies. In the local school, teachers assisting in that teacher's remediation walk the same tightrope.

Implications and Recommendations

Raising the professionalism of teachers clearly should not end with upgrading standards of admission and programs in teacher training institutions. Between 1986 and 1990, nearly one million teachers will be hired in the United States (Plisko, 1983). In California alone, which employs 170,000 teachers, over 110,000 will be hired in that same period (Honig, in Johnston, 1985). Writing about the effort and investment it takes to dismiss incompetent teachers, Bridges (1986) calls these statistics a "window of opportunity" for school districts, but one fraught with perils as well as possibilities. He recommends concentrating scarce district resources on the recruitment, selection, evaluation, and development of probationary teachers. Bridges warns that the history of inadequate teachers will repeat itself unless better selection methods are devised.

This major influx of new teachers provides school districts with the opportunity to upgrade dramatically the competency of their teachers. But if districts are to take advantage of this opportunity, they must reform their teacher selection practices. As a beginning, school boards need to adopt written policies that (a) declare the districts' commitment to hire the most qualified teachers, (b) establish guidelines of fairness to candidates, (c) require intensive job analyses prior to hiring, and (d) encourage validation of locally developed procedures.

Next, districts must provide key administrators with training to be able to identify the "best" prospective teachers and with time to be able to recruit them. Active recruitment--"getting there first"--is particularly important for inner-city and rural districts that have a shortage of candidates, and for any employers seeking teachers in high-demand subject areas. Training of employers is essential because no one test or procedure offers any magic answer to the selection of teachers. The role of the teacher is a complex one, requiring a wide variety of professional and personal skills. Districts can acknowledge that complexity by using selection teams to increase the reliability of interviews and by seeking a wide range of information about each candidate.

A combination of factors predicts teacher performance. Districts can screen candidates initially on ability and achievement measures--grades, student teaching performance, scores on basic skills and verbal ability tests, and letters of recommendation. Next, districts can measure personal and practical skills through highly structured interviews, live or videotaped demonstrations of teaching, and lesson designs. Locally designed criteria can and must be validated at the local level: three years later, do teachers hired under these particular criteria in this particular district earn demonstrably better evaluations than teachers hired under less stringent procedures?

It is relatively easy to develop selection procedures that look good on paper. School districts can adopt policies that proclaim fairness and enthrone excellence, but no matter how good the criteria appear on paper, members of selection teams must ask themselves in what way their choices may be influenced by an attraction to applicants of similar attitudes or abilities. Those judging applicants must consciously examine the competencies needed in the vacant position, as well as their own attitudes toward education, their school, and prospective staff members. Painfully, members of selection teams must study their faculty's weaknesses, looking for gaps in their talents or perspectives. Filling those gaps can mean hiring an individual who will contrast, perhaps even conflict, with existing skills and norms. The task is an awesome one: it means appreciating the power of potential group members and yet knowing just how much diversity to embrace. One question should appropriately guide the interview: "Who can get this job done?" In other words, who can both promote student learning and contribute to this professional team?

Cycles can be broken at many points. If a cycle of mediocrity or of destructive competitivism is to be broken, recruiting and hiring the most competent graduates from teacher training institutions can begin to break that cycle. Selection teams can strengthen educational programs not by asking which applicants "fit in" to their school in the present but by asking: Which applicants are most likely to help forge the best possible school in five or ten years? Which will provide leadership in curricular evaluation? Which will show sound judgment in participative decision-making? Which might someday be considered a "master" or "mentor"?

The cycle can be broken in yet another way. Capable candidates seek effective schools. Schools that offer good working conditions for teachers--environments characterized by cohesion and support, collegiality and professionalism--attract outstanding educators. Perhaps more important, they retain outstanding educators. Organizational vitality and teachers' competency interrelate as mutual cause and effect.

Improving School Effectiveness Through Collegial Observation and Feedback

The discovery of characteristics that distinguish effective schools from less effective schools is one of the major achievements of recent educational research. One consistent research finding is that effective schools have vigorous instructional leaders who set high expectations for student achievement, clearly communicate instructional goals to teachers, carefully monitor student progress, and regularly observe teachers' performance in class to help them improve.

As these and other findings about effective schools have been publicized, one effect has been to raise everyone's expectations about how schools and their teachers and principals should perform. Now all principals are expected to imitate their "effective" colleagues and pay more attention to instruction. The education reform movement seems to have been fueled in part by expectations such as these.

The question of whether all principals can indeed become effective instructional leaders needs to be addressed. Researchers have in fact found relatively few principals who match the portrait of effective leadership. To view the performance of exemplary leaders as the norm may be counterproductive, serving only to frustrate the majority. Fortunately, there are alternative ways of bringing quality instructional leadership to the schools. Although the recommendations and proposed models vary, they all assume that instructional leadership can be a collective activity, drawing on the strengths and expertise of others than just the principal.

Here our attention focuses on one activity of instructional leadership that can be ably performed by teachers. Researchers agree that regular classroom observation has great potential for fostering a schoolwide commitment to ongoing instructional improvement, a hallmark of an effective school. Little and Bird (1984) state, "Observing and being observed, giving and getting feedback about one's work in the classroom, may be among the most powerful tools of improvement" (p. 12).

We will consider some of the benefits of and proposed approaches to collegial observation and feedback after first examining why the performance of this activity is difficult even for those principals most adept at instructional leadership.

Limitations on the Principal's Role as Supervisor

Teacher supervision is a complex, sensitive, and time-consuming task. It requires a considerable range of knowledge and skills: knowledge of subject matter being taught; understanding of the instructional strategy being used; access to a range of data collection devices, along with training in how to use and interpret them; and recognition of suitable goals or outcomes for teachers. Because teachers are often defensive or threatened by the supervision/evaluation process, principals must also possess interpersonal skills that facilitate mutual trust.

Furthermore, supervision is time-consuming. For supervision to help teachers analyze and improve their practice, observations must take place more than once or twice a year. Six times per year is a reasonable expectation, according to veteran teacher educator Acheson (1986). For feedback to be most helpful, each observation must consist of a cycle of several events: a preobservation conference, the systematic collection of data by means of classroom visits and other means, and a postobservation conference in which data are shared and analyzed. The principal's minimum time investment is 2 hours per cycle or 12 hours per teacher per year. In a school with 30 teachers, this translates into 360 hours per year--again, this is a minimum--or roughly one-fourth of a principal's total time on the job.

Of course, principals have many other demands on their time, and these demands seem to be proliferating: crisis situations that interrupt even the best made plans, demands from the central office for myriad reports, and other essential duties of an instructional leader such as curriculum development and monitoring of student progress. Furthermore, the current trend in schools is toward increased involvement of principals in such managerial areas as personnel selection and supervision (both certified and classified), community relations, and building management. As Acheson (1986) wryly notes, "It is often easier to postpone the observation of a lesson than to keep the dads' club waiting or the contractor who has a steamroller parked at the door" (p. 4).

Finally, one of the most persistent problems in teacher supervision and evaluation is that the purposes of the activities differ. In his role as supervisor, the principal works with all teachers--good, average, and marginal--as a mentor who helps teachers develop skills and expand their repertoire of teaching strategies. This requires a high level of trust between teacher and supervisor. Yet principals are also responsible for evaluating teachers in order to make decisions about retention, promotion, and tenure. Evaluation is an intrinsically threatening activity, especially to marginal and inexperienced teachers who could benefit greatly from feedback. A principal must be highly adept at human relations if he or she is to balance the conflicting roles of mentor and judge effectively.

Is it any surprise, therefore, that researchers in John Goodlad's A Study of Schooling found little evidence that the principals were exercising instructional leadership (Tye & Tye, 1984)? Or that many teachers do not like the ways they are currently being supervised and evaluated (Natriello & Dornbusch, 1980-81)? If teachers view evaluation with suspicion, they are often justified: for many, their career status depends on one or two perfunctory observations by a supervisor who lacks expertise in their subject matter and in instructional methods.

The poor quality of much of the supervision teachers receive seems not to have soured them on the potential of supervision to help them. Acheson (1986) has found that teachers express a clear preference for an active instructional leader who meets with them individually, discusses their concerns, and provides constructive feedback on their teaching. Reporting on case studies of teacher evaluation practices, Stiggins and Bridgeford

(1985) state, "Repeatedly, teachers suggested more frequent formal and informal observations, greater use of peer observation and self-evaluation, and more effective preparation and training for evaluators" (p. 92).

Bird and Little (1985) conducted an in-depth ethnographic study of instructional leadership in eight secondary schools, two of which had principals who were particularly vigorous and effective instructional leaders. Although the teachers of these two principals were appreciative of the in-depth supervision they received, even these teachers were virtually unanimous in saying they wanted more supervision than they were getting.

It is apparent that principals face a multitude of stubborn obstacles in trying to be instructional leaders--particularly in giving helpful supervision to teachers. Consequently, the supply of supervision falls far short of the demand. If the potential of classroom observations for improving instruction is to be realized, the bottleneck of supervision at the principal's office must be solved.

Nevertheless, if others, such as teachers, are to assist with these tasks, the principal must still be regarded as the key actor in calling these new forms of instructional leadership into being. As Bird and Little (1985) state, "Other leadership is likely to require at least the tolerance, but more likely the active and direct support, of the principal" (pp. 2-5). According to these two researchers, principals have three options available to them: they can import leadership by bringing in district supervisors or others, supply leadership directly, or "organize the staff to provide leadership for each other" (pp. 1-3). It is this third option--particularly cultivating a pattern of collegial observation--that seems to hold the greatest promise for improving the practice of teaching and renewing the structure of schools.

Advantages of Collegiality

The collegial approach to classroom observations mobilizes the talents of teachers in a concerted effort to improve instruction. The chief advantage of collegiality, therefore, is that it marshalls the human resources necessary to accomplish the task. Besides improving instruction, collegiality can also bring other benefits.

First, collegiality is predicated on a view of teaching as a profession. A peer support network is, as Hopfengardner and Walker (1984) suggest, "the cornerstone of a profession" (p. 36) since professions are characterized by extensive peer review and standards of practice that evolve through the collective experience of practitioners. If teaching were to take on more of the characteristics of a profession, job satisfaction of teachers would increase and more capable individuals would likely be attracted to teaching as a career.

Another advantage of collegial support systems is that they involve a separation of classroom observation for professional development from evaluation for personnel decisions. The principal will still carry the formal title of supervisor and will retain responsibility for making personnel decisions. There are obvious advantages to separating these two functions. First, teachers are more likely to trust their colleagues--whether they be department heads, "master teachers," or peers. Such a relationship of mutual trust helps to foster cooperation and makes teachers more receptive to feedback and willing to change. Consequently, collegial observation programs have the potential for generating a mutual and sustained interest among teachers in improvement and innovation. The school climate becomes one where teachers constantly talk to one another about teaching.

Alfonso and Goldsberry (1982) point to still another advantage of collegiality: "The successful introduction of instructional innovation is more likely in schools having active colleagueship."

Finally, assigning the major responsibility for classroom observation to teachers themselves will lighten the burden on the principal's time. The principal will be free to devote greater attention to other essential instructional leadership tasks such as coordinating the supervision process, planning curriculum development, managing incompetent teachers, communicating regularly with staff, and planning inservice activities.

Flexibility of Implementation

Collegial observation can take many different forms, depending on the needs of different schools. In large high schools, department heads often share certain aspects of instructional leadership with principals, particularly in curricular matters pertaining to their subject area. Because of their expertise in the subject area, they would not be prone to the skepticism often directed at principals in the course of an evaluation by teachers (who cannot see, for example, how a former math teacher is in a position to evaluate a foreign language class).

Entrusting department heads with this responsibility would, however, call for a redefinition of that role and some training in supervisory skills. Department heads would need additional released time from classes and a stipend for the added responsibilities. The payoff would be a more cohesive instructional program in each department, since the department head would be closely in touch with others' teaching. He or she would be in a better position to discuss common concerns and evaluate the overall program at staff meetings. Because the position of department head would gain considerable prestige in the process, this form of collegial support would be fully compatible with the various career ladder and differential staffing proposals that many schools are considering.

A more direct approach is to have teachers observe their peers. Teachers trained in systematic observation procedures would be ideally suited not only to provide constructive feedback to one another, but also to learn teaching techniques and strategies from one another. One modification of such a strictly egalitarian system might include a mentor approach, by which experienced teachers are assigned to help new teachers refine their skills and develop their repertoire. Such approaches would likewise involve adjustment in time schedules to give teachers the time to observe one another.

One particularly impressive model is the Stanford Collegial Evaluation Program, developed in the mid-1970s by Sanford Dornbusch, Terrence Deal, and other researchers at Stanford's Center for Research and Development in Teaching. The terminology of this program notwithstanding, teachers observe and give feedback to one another only for their professional development; they do not evaluate in the summative sense.

As Roper and Hoffman (1986) describe it, the Stanford program is a reciprocal arrangement in which teachers are paired off and each teacher in the pair is responsible for evaluating the other. The program has seven interrelated steps: (a) choosing a partner, (b) selecting criteria, (c) self-assessment, (d) evaluation by students, (e) observations, (f) conferences, and (g) planning a program of improvement. The entire sequence requires 10 to 12 hours spread over a month or two. Each of these activities is conducted reciprocally: partners jointly develop an agreed-upon set of criteria, assess themselves and each other, observe one another, and mutually develop plans for improvement.

In field tests of this program, the improvement plans resulting from this process covered the whole range of teaching techniques and behavior. In many cases, partners agreed to continue observing one another and to assess progress in implementing their plans. Thus the program was, in certain cases, spontaneously self-replicating: the improvement plans served as the criteria for the next round of observations. Although the teachers in the program learned a great deal from their colleagues' assessment of their teaching, many said they learned as much from observing their colleague.

Whatever type of program is adopted, teachers' organizations could be involved in its planning and implementation. Although these organizations tend to be wary of teachers' supervising or evaluating each other, they are normally enthusiastic about participating in staff development activities. Providing teachers' organizations with an active role in collegial support programs and in the setting of standards of competence within the profession could conceivably lead to a reduction in labor-management tension. Teachers' organizations might even come to resemble professional organizations rather than labor unions.

Obstacles to Collegiality

The chief obstacle to implementing peer-assisted instructional leadership appears to be the ingrained habits of teachers and administrators alike. In many schools--as A Study of Schooling (Goodlad, Sirotnik, & Overman, 1979) convincingly demonstrated--teachers practice their craft in virtual isolation from one another. Two mutually reinforcing factors fuel this norm of isolation. One is teachers' understandable reluctance to invite scrutiny of their work by others. They fear that the data gathered from classroom observations by their peers will be used against them in personnel decisions. Most teachers do not, for obvious reasons, relish the idea of their colleagues informing on them to the principal.

Also isolating teachers from one another is the school's structure. Bird and Little (1985) note that "the usual school schedule, day, and budget" provide "little opportunity or support for trying to make teaching a collective practice" (p. S-17). They found that those teachers who actively cooperated did so at their own personal cost: "considerable overtime was routine" (p. S-17). Thus, the school's structure, instead of providing teachers with opportunities to overcome their guardedness, actually impedes those teachers who wish to step outside it.

Other teacher and administrator attitudes likewise have been found to be injurious to collegiality. McFaul and Cooper (1984) found that "peer clinical supervision" did not work in a school context characterized by "isolation and fragmentation, stratification, standardization, and reactionism" (p. 7). On the positive side, collegiality requires a school context marked by norms of experimentation, mutual encouragement, and collective effort toward school improvement.

All these obstacles to collegiality need to be addressed during the implementation process. Teachers need to be assured that observation data will be kept strictly confidential and that personnel evaluation, conducted by the principal, will be a separate and independent process. The school's structure needs to be altered to reserve adequate time and resources for teachers to work with one another. And administrators and teachers must join together to build a school climate conducive to peer support.

Role of the Principal

The key actor in making all these changes is the principal. The authority and initiative of the principal are needed to displace norms of isolation and independence with norms of cooperation and continual improvement in practice. Principals also must provide the structural support--time, resources, programs.

A school that operates according to collegial norms must indeed have a different kind of principal than the traditional school that operates according to bureaucratic norms. As Alfonso and Goldsberry (1982) point out, coordinating professionals in the fluid context of collegial support is a complex task that "cannot be done through generating formal rules, or even standardized procedures." Consequently, a collegial school requires a higher caliber of leadership than does a bureaucratic school.

Some principals may justifiably be concerned that, in delegating some of their supervisory responsibilities to teachers, they are yielding authority over a process for which they will still be held accountable by the central office and the public. However, peer-assisted classroom observation does not require principals to abdicate leadership of the instructional process and indeed it will not succeed if they do so. Sharing of leadership with others is not abdication. Most observers would agree with Bird and Little (1985) that each "school is rich in potential leaders" and "that the question is how that leadership comes to be organized" (pp. 2-5). Peer-assisted leadership is not intended to operate independently of the principal but under his or her direction. The principal's efforts are required, for example, to initiate collegiality among teachers, to train teachers in observation and conferral techniques, and to monitor and encourage the peer observation process in order to sustain its momentum.

Bird and Little found that schools in which teachers most highly approved of peer observation and practiced it most frequently had principals who demonstrated effective observation practices. Apparently, the teachers in a school became attracted to the idea of observing one another when they benefited from their principal's observations. In this way, the principal's modeling of helpful practices of supervision can help to catalyze peer observation.

In addition to the new roles as instigator, facilitator, and manager of the collegial support process, the principal will retain her or his role of personnel evaluator. It is commonly agreed that use of peer observations for personnel decisions would sabotage the process by engendering mutual mistrust and ill-will between teachers. This process could be conducted in the traditional way. That is, the principal could make two or three evaluations of each teacher per year to ensure that minimum competency standards are met.

But is it essential that every teacher be evaluated? It may not be necessary for the majority of experienced teachers, who would set and monitor goals for professional development through their participation in collegial observation. The principal could then focus attention on new teachers and those identified as needing improvement. This begs the question, however, as to how the principal is going to identify veteran teachers who begin to perform unsatisfactorily, if teachers are not permitted to share with the school's administrator troubling discoveries from their peer observations. Either the principal is going to have to evaluate every teacher--perhaps some less frequently than others--or will have to work out a suitable alternative arrangement with teachers that modifies the requirement of confidentiality. For example, one way to avoid jeopardizing the integrity of the peer review process may be to have principals consult with department heads as intermediaries. The staff of each school will have to arrive at their own solution to this dilemma.

If principals can be largely freed from the burden of evaluating every teacher, they will be able to direct their attention and expertise where it is needed the most: providing vision for and coordinating the process of collegial support, evaluation, professional development, and curriculum development in their schools.

Compatibility with Other Structural Reforms

Peer-assisted instructional leadership can be seen as part of the growing trend toward decentralization of authority in schools and professionalism among teachers. As such, it is fully compatible with such concepts as career ladders for teachers, team management, participative decision-making, and school-based management. These concepts involve fundamental changes in the role of the principal, but also complementary changes in the roles of both teaching staff and district office. For example, the added authority conferred on a principal through school-based management would carry many new responsibilities, including budget allocation, curriculum design, and personnel selection. Team management and participative decision-making models have likewise been found to require more of the principal's time than traditional bureaucratic approaches to management.

Collegial support has the potential of freeing principals from a task which, if they were to do justice to it, would require a fourth of their time. This time could then be used to accommodate the additional responsibilities that go with greater school autonomy and collaborative modes of decision-making. At the same time, both school autonomy and teacher participation would be greatly enhanced by an enthusiastic and professional teaching staff committed to instructional improvement.

As a consequence, collegial support may be seen as both the precondition and the essence of a movement away from bureaucratic control and toward democratic school management--a movement that holds the overall promise of reorganizing schools to make them more responsive to the needs of the public.

Conclusion and Recommendations

Rising expectations about the performance of principals and their schools, combined with a realization that principals face major obstacles in meeting those expectations, have fueled a search for alternative means of bringing instructional leadership to schools. One promising alternative is to have teachers observe and give feedback to one another for their professional improvement. Collegial support has been tested in a number of schools over the years, with mostly encouraging results. Now, in the midst of the reform movement and the growing interest in making teaching truly a profession, collegial support seems to be an especially appropriate response to conditions in today's schools.

The current appeal of peer observation is twofold. First, it makes a potent, research-validated method of instructional improvement--classroom observation of teaching--a more common occurrence in schools. And at the same time it transforms teachers' work environment and thereby elevates the status of teaching and enhances its attractiveness as a career. Collegiality entails replacing the timeworn bureaucratic model of schools with the professional model in which teachers are accorded respect and given increased responsibility for their professional development. In this sense, the same barriers that stand in the way of collegiality also stand in the way of attracting capable and energetic people into the teaching profession.

Because of the pervasive changes that collegial observation brings, successful implementation will require cooperation among all the key actors in a school system. In one implementation being planned in schools in

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CURRENT ISSUES AND FUTURE DIRECTIONS IN SPECIAL EDUCATION

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Recent trends and societal attitudes have brought many handicapped children and adults from segregated settings into the regular educational system and normal community environment. In 1975, the passage of P.L. 94-142, The Education of All Handicapped Children Act, required states by September 1, 1978, to provide appropriate education for all handicapped children between the ages of 3 and 18. The implementation of the Act brought changes in delivery systems of both regular and special education. Although gifted children are excluded from federal legislation for exceptional children, their unmet needs in regular school programs, the demands on schools to provide special learning environments, curriculum, and trained personnel, parallel the needs of other exceptional children.

Who are the children we call exceptional? Some use the term for a very intelligent or talented child. Others use it when describing any atypical child. In this chapter we have used the term to include both the child who is gifted and the child who is handicapped, which is a generally accepted definition. Therefore, the exceptional child is one who differs from the average child in mental characteristics, sensory or communication abilities, social behavior, or physical characteristics. These differences exist to the degree that the child requires a modification of school practices or special education services to develop to his or her potential.

There are many unresolved issues in the education of exceptional children and youth. This chapter will address four topics of current interest and concern: (a) gifted education, (b) restructuring the relationship between regular and special education, (c) secondary special education and the transition from school to work, and (d) early childhood, birth to three.

Gifted Education in Perspective

The gifted and talented currently represent an underserved and underachieving population of students. This situation will not change without a concentrated effort to affect policy in the schools (Callahan, 1984). Education of gifted children and youth continues to be of concern both to their parents and to educators of the gifted. It is estimated that only 40% of gifted students who require special education services are receiving them. However, there is a growing national interest in support of gifted education. This sociopolitical climate, created by A Nation at Risk (National Commission on Excellence in Education, 1983), and numerous other critical examinations of American education has led to hearings, investigations, and demands for excellence in education (Whitmore, 1984).

Programs and services for the gifted have not kept pace with those for the handicapped. A major difference has been in federal funding. Federal legislation has supported the handicapped in research, personnel preparation, and program demonstration. Such federal support is not available to the gifted, and states and local communities have not provided it.

Who Are Our Gifted Students?

Gifted children, as reported by state directors of gifted programs, make up between four and six percent of the student population (Kirk & Gallagher, 1986). Identification of the gifted has always been and continues to be an issue. Because of varying selection criteria, a child in a gifted program in one school system may not be eligible for such a program when the family moves to another area.

Traditionally, the gifted have been identified for special programs by IQ tests, academic records, and teacher or peer nominations. Generally one thinks of the gifted as having outstanding abilities in such areas as intellect, academic achievement, creative thinking, leadership, and the visual and performing arts.

Within the gifted population there are four subgroups requiring special attention: (a) highly gifted children; (b) gifted girls; (c) gifted underachievers; and (d) gifted students who also have a handicap.

Kirk and Gallagher (1986) describe these special groups of gifted children and young people. The highly gifted children are those with extraordinary abilities and are rare in our society. They are considered child prodigies. They can speak in foreign languages before others enroll in kindergarten; they enroll in college courses at age 12, and win national honors for accomplishments in their twenties. The number of these children is small, but should or can the education system respond?

There is a growing belief that gifted girls represent one of the largest groups of untapped potential. Probably reflecting society's attitudes about what the female can accomplish, gifted girls show less aptitude (interest?) in mathematics and science.

Handicapped children who may be gifted are often overlooked. Because a child cannot see or walk does not mean that the child does not have intellectual gifts or talents. What it does mean is that such children stand a good chance of having such talents overlooked.

Programs for the Gifted--A National Picture

A recent national survey conducted by the Richardson Foundation (Cox, Daniel & Boston, 1985), has created much interest in gifted education. The "overriding reason" the Foundation decided to undertake this survey "was the lack of hard data about what is going on in the programming for able learners, particularly noticeable on the national scale" (p. 29).

A questionnaire was sent to every public and parochial school district in the country. Then a more detailed questionnaire was sent to the more than 4,000 who responded to the first. The 1,572 responses to this second effort (400 schools and 1,172 school districts) were what was analyzed. The sample is certainly not random and can only reflect the picture of gifted education in the programs that responded. Nevertheless we have some basic information on existing program options, identification procedures, extent of substantial programs, and other interesting program data. The most frequent program options were the part-time special class or "pull out" model in the 72% of the districts reporting. This option was followed by enrichment (63%), independent study (52%) and resource room (44%). The least prevalent gifted programs were the nongraded schools (3%), the special school (4%), and fast paced courses (7%).

In addition to the survey, the researchers visited a number of the schools to gather on-site program data for analysis. Perhaps one of the most interesting concepts and potential promising practices is that of flexible pacing. "The conviction that students should move ahead on the basis of mastery may be the single most important concept for educators designing programs for able learners" (p. 135). The researchers visited a number of elementary schools and one high school where instruction based on age, grade, and uniform pacing was eliminated.

Unresolved Issues and Needs

Many people have difficulty with the concept that special education should include the needs of the gifted with the needs of the handicapped. But the issue of unfulfilled potential is the same. It is as critical for the gifted as the handicapped. The unmet needs "in regular school programs and the demands on schools to provide learning environments, curriculums, and trained personnel for children with special gifts parallel the needs of other exceptional children" (Kirk & Gallagher, 1986, p. 31).

Unresolved issues in gifted education have been identified by Kirk and Gallagher (1986) as: (a) love-hate relationships with gifted--many who support special education for handicapped define exceptionality in terms of deficits and are reluctant to extend special programming to the gifted; (b) special teachers and classroom teachers--personal and administrative adjustments are needed; and (c) undiscovered and underutilized talent. In a special issue of Gifted Child Quarterly, Jenkins-Friedman (1986) summarizes the research and development activities needed to stimulate research and encourage innovations: (a) use meta-analysis to study effects of gifted programs on achievement; (b) study the impact of labeling students gifted; (c) include creativity as an aspect of giftedness; (d) examine thinking processes rather than focusing on the product; (e) develop, use, and evaluate new models for creative thinking and problem solving; and (f) promote the role of the federal government as a catalyst for higher and more consistent levels of gifted program services to students, teacher preparation, and basic research and development.

Future Directions and Challenges

- To provide impetus and development support, the federal government should act as a catalytic agent in the support of such activities as research, program development, leadership training, and dissemination. Examples of research include: (a) study of higher intellectual processes, (b) development of coping skills, (c) nature and treatment of underachievement, and (d) talent development in minority groups. An additional essential support would be to make visible demonstration gifted programs that are exemplary. Another productive investment would be to strengthen the leadership cadres in the state departments of education (Gallagher, 1986a).
- Undiscovered gifted students should be found and their talents used. This includes the underachievers, children with different cultures, and handicapped children.
- Education should address the educational needs of the very highly gifted students.

Restructuring the Relationship Between Regular and Special Education

A most important issue facing special education in the next few years is restructuring and redefining the relationship and boundaries between special and general education. Here we are talking primarily about the mildly handicapped who have been "mainstreamed" into the regular school program--either with or without necessary special education support services.

Special populations must also be a consideration as all students are appropriately served in the mainstream. "It is clear that children...will be poorer, more ethnically and linguistically diverse and will have more learning differences. A major challenge...during the next decade will be to redefine the tolerance of individual differences within the regular classroom and to alter the current categorical mindset we have that tends to refer away from the regular classsroom a large number of children who are having learning problems" (Schrag, 1986, p. 84).

An area demanding critical attention in the development of educational programs for handicapped students is the proactive participation between special education and general education practitioners. While there is a wide range of opportunities for interface, the most promising and productive examples occur among direct service providers at the local building level where staff support teams provide a forum for addressing student and staff support, personnel development, and instructional technology. At the broader local and state levels, leaders in both general and special education must cooperate in promoting and supporting opportunties for cooperation in service delivery and in the funding of all education programs (Greenburg, 1986).

Madeleine C. Will, Assistant Secretary for the Office of Special Education and Rehabilitative Services (1986) further identifies the issue in terms of individualization of instruction and the separation of educational systems:

> After 10 years since the passage of Public Law 94-142 education systems have redefined the concept and practice of individualized instruction and also the role of parents in the educaiton of their children.
>
> The language and terminology we use in describing our education system is full of the language of separation, of fragmentation, of removal. To the extent that our language reflects the reality of our system as many diverse parts never or rarely connected as a whole, it reflects a flawed version of education for our children. (p. 412)

Current Issues and Practices

The least restrictive environment provision of P.L. 94-142 directs that, to the maximum extent appropriate, handicapped children will be educated with nonhandicapped peers. This stipulation of the Act has been controversial and difficult to implement in local schools. Problems and issues include: (a) the shared responsibilities by general and special educators, (b) the relationship with the regular classroom teacher, (c) the question of a merger into a single system, and (d) the financial dilemma.

Shared responsibilities. The development of public educational systems demonstrates the extent to which special education and general education structures were initiated as conceptually and administratively separated entities. Over time, however, the essentially parallel systems have become successively convergent and even interdependent.

There is little doubt of the increasing need for shared responsibilities by general and special educators--whether service providers or decision makers, and particularly at the building level. Promising practices are in place through prereferral strategies on behalf of students and the emergence of building teams for both student and teacher support.

General educators who were once expected to direct instruction to the level of the largest portion of students in the classroom are now expected to address the ever-expanding range of student abilities and limitations and charged to provide instruction appropriate for each child. Decision makers in both general and special education are increasingly aware of the interdependence of resources and services; and public program scrutiny and product demands may have never before been greater (Greenburg, 1986).

The teacher and the resource room and consultant models. Many mildly handicapped students once in special education classes are now in regular classrooms. Both the resource room model and the teacher consultant model provide services to handicapped children placed in regular classrooms. To some extent, these models have bridged special education and general education instructional services.

The resource room model is probably the most widely implemented alternative to the segregated, self-contained special education class. The handicapped child is placed in a classroom provided for general education when not in the resource room for instruction support. These resource room programs usually have recommended time parameters for an individual student's attendance, but the time can vary from a minimum of three hours per week to half of a school day.

Considerable need exists, then, for coordinating efforts between the resource room teacher and the general education teacher. Two particular complications frequently exist in this area--time constraints of both teachers, who have full instructional responsibilities, and need for development of some special education expertise by the general education classroom teacher. In addition to coordination demands, there are problems created in the general education classroom by the removal of a child, even on a regular, predictable schedule. While most teachers in general education classrooms have adapted to the frequent interruptions and have developed some understanding of the resource room concept and program, there remain significant exceptions. In many instances, the responsibility falls to the handicapped child to become informed of missed assignments and to complete classroom work missed while special education services for the learning difficulty were provided in the resource room (Greenburg, 1986).

The special education teacher consultant services delivery option, developed for addressing the learning difficulties of handicapped children, provides support and consultation to general classroom teachers. This option is less widely used than the resource room. Problems in implementing this model are related to the necessary skills in communication, human relations, and problem solving. Also, special educators charged with direct responsibility for assistance to general classroom personnel may be limited in repertoire of techniques regardless of the value of the special education information and assistance they have to offer.

The situation can become particularly critical if a general education classroom teacher is an unwilling participant in the whole process. Such, too, is fuel for the general education concern about the adequacy of the special education system's ability to provide sufficient support along with the return of students once thought unable to perform in the general education class setting (Greenburg, 1986).

A single education system? Special education was developed over a century ago to meet the instructional needs of students considered to be exceptional. Since then a dual system of education--special and regular--has developed. Although special education is technically a "section" of regular education, there does exist an operating dual system, each with its own pupils, teachers, supervisory staff, and funding (Stainback & Stainback, 1984).

U.S. Department of Education Assistant Secretary Madeleine Will (1984) suggests that confusion exists concerning the goals and the interrelationship of general and special education. She notes the evolution of general and special education into separate and compartmentalized service delivery systems. Ms. Will (1986) later cites the parallel systems as obstructive to accomplishing the overall goal of P.L. 94-142 and calls for collective contributions of general and special education skills and resources in addressing student services.

The Stainbacks' (1984) position is that "there are not two distinct types of students--special and regular....regardless of any designated cutoffs, all students still differ to varying degrees from one another along the same continuums of differences" (p. 102). The authors suggest, then, what could exist is a single, unified system of education in which general education and special education expertise and resources are merged to provide for individual differences among all students and would conserve the human and fiscal resources required by the nature of dual (and often duplicative) systems.

Particularly germane to this discussion is the Stainback and Stainback argument that the existence of a dual education system has "fostered competition...rather than cooperation among professionals...[and] has interfered with...cooperative efforts" (p. 104). The division has extended into the application of research findings, preservice preparation of personnel, and direct service programs by creating otherwise nonexistent barriers and dividing "resources, personnel, and advocacy potential" (p. 105). Among the education systems merger implications would be (a) a refocus by instructional categories of the preparation and assignment of personnel, (b) general heterogeneous grouping of students with homogeneous grouping by instructional needs only for specific courses, (c) support personnel's attention to appropriate student program planning rather than to classification eligibility, (d) school funding by program element rather than the categories of exceptionality, and (e) viewing a specific individual difference as one of the student's characteristics to be considered rather than an educational disability around which planning occurs.

There is debate about a single system and support for special education as a system (Mesinger, 1985; Lieberman, 1985). Mesinger bases his opposition in a perception that the only positions which seem to assert it is time to evolve to a single system are those which emerge from the special education community. He notes a reluctance "to abandon special education as a system until I see evidence of a drastic improvement in regular educational teacher training and professional practice in the public schools" (p. 512).

Lieberman (1985), on the other hand, commends Stainback and Stainback for presenting the concept; but he sees the nationwide initiatives of school effectiveness and excellence in education as "upholding the nature of the system, standards, and grades above the nature of the individual" (p. 516). He further suggests the purposes of special education can best be met through continuation of the dual system "with each party maintaining a strong sense of individual identity, while creating an ideal interface between the two" (p. 516).

With evidence of such divergence in thinking among leaders in the special education community, there appears a clear need for the ideal interface between general and special education.

The financial dilemma. Both general education dollars and special education dollars are in short supply. There may be a greater need now than there has previously been for general education and special education to engage in cooperative planning limiting duplication of effort and efficiently providing for appropriate programs and services for all students. Given the variety of systems for funding general education and special education programs, it is more difficult to orchestrate collaborative education finance lobbying efforts in some states than in others. Cooperative efforts seem most successful in those states where the funding formula for special education programs is based on the same foundation as general education funding. Both constituents, then, can press for increases in the foundation amounts, which increase program allocations accordingly. In those situations, greater attention can be focused on local allocation practices (Greenburg, 1986).

Future Directions and Challenges

- The resource room and consultant teacher models need considerable research and review as the best ways to deliver instructional services.
- Special education and general education must develop a mechanism for a shared responsibility for all students.
- Educators need to maintain awareness of the fiscal condition of the total education agency and seek out and promote opportunities through which special education and general education efforts can be combined to reduce duplication and to conserve the fiscal resources of both.

Secondary Special Education and the Transition from School to Work

In recent years, public schools have become increasingly sensitive to the special educational problems of handicapped secondary youth. Today secondary programming is a primary concern of special education. Key issues include: curriculum, with particular attention to basic skills (reading, writing, arithmetic, communication, and social skills); career and vocational education; and transition from school to work.

Transition from school to work is a current issue for special education, vocational and career education, and the federal government. Assistant Secretary Will (1983) has announced that the Office of Special Education and Rehabilitation Services established as a national priority the improvement of the transition from school to working life.

Needs in secondary education include (a) development of appropriate secondary school curriculum, (b) continued focus on effective transition models, (c) adequate preparation of secondary school special education personnel, and (d) research to track special education students who exit from the school system. More specifically, Judy Schrag (1986), Washington State Education Agency, reported the following problem areas identified by states:

- lack of information on available post school services.
- inadequate procedures for transfer of records.
- inadequate procedures for application to post school services.
- identification of post school services prior to graduation.
- little relationship between the high school curriculum and the demands in post school training sites.
- need for earlier beginning in vocational planning and training.
- need for more involvement of parents in knowledge of available services, access to services, and overall planning of increased transition employment and community services.

Current Issues in Curriculum, and Transition Programs

In a recent statewide survey, Halpern and Benz (in press) examined the status of high school special education in Oregon for students with mild disabilities. Subject groups included school district administrators with responsibility for sepcial education services at the secondary level, special education teachers who were assigned to high schools, and parents of high school students with mild disabilities. Questionnaires were developed for each group and focused on the following questions: (a) what is the current status of special education programs, (b) what gaps presently exist, and (c) what areas are in greatest need for improvement?

In the curriculum area, the study uncovered some unresolved basic issues. Questions were raised concerning both the nature of appropriate content within the four curriculum domains (basic, academic, occupational, and independent living) as well as the relative emphasis that should occur among the domains.

Another issue discussed by Halpern and Benz (in press) concerned the balance between the basic and other components of the curriculum:

> On the one hand, it is clearly desirable to focus on the basic skills, whenever there is a reasonable hope for effective mainstreaming. Such a policy, however, can be self-defeating in two ways: (1) the student may still not succeed, in spite of our best efforts; and (2) the time and effort spent on basic skills

acquisition may come at the expense of not learning the community adjustment skills being taught in other parts of the curriculum. When this happens, the student is a double loser.

The resolution of these issues will not be easy. In the meantime, unfortunately, as we struggle to find the right answers, parents, students, and teachers are often likely to become frustrated as decisions are made concerning the educational programs of students.

Since the passage of the 1983 Amendments to the Education of the Handicapped Act, transition of handicapped students from school to work, community living, or higher education has become a national priority. Model transition projects and programs are being implemented in states using both state funds and federal discretionary funds. Projects include development of a functional high school curriculum, planning for vocational transition and employment placement, and the development of increased employment options.

Here are examples of three state legislatures' response. Massachusetts passed legislation informally known as "Turning 22 Legislation" which set up a Bureau of Transitional Planning to help disabled students move from school to adult social service agencies after they reach age 22. Other states' legislation includes: California--formally coordinate transition planning for handicapped leaving schools; Washington--requirement of the special education and vocational education units in the state education agency and the Department of Community Development to develop formal state planning for transitional services and also implement a mechanism to follow handicapped high school graduates' transition to adult services and employment options (Schrag, 1986).

Although transition models are being developed, there is still much work to be done. Halpern (1985) reported that the findings of a survey which asked questions about links between the schools and community agencies were not particularly encouraging:

> Less than 50% of the administrators indicated the presence of even informal agreements with adult service agencies concerning the transition needs of students with disabilities. Only 10% identified the existence of formal agreements. Although 60% of the teachers stated that other agencies had been contacted concerning transition services, only 20% of the parents acknowledged ever receiving such services. Further contributing to the lack of linkages, only one-third of the districts provided other agencies with census data on the number of graduating students each year, and just slightly more than one-third collected follow-up information on their graduates.
>
> The question of coordination arose also in this context, and once again, teachers and administrators did not often agree on who was responsible for coordinating transition services. Furthermore, only two-thirds of the administrators even believed that transition

> services were an important concern of school districts. By inference, it would appear that responsibility for this area was being placed on other agencies. (p. 484)

Future Directions and Challenges

- Studies are needed that investigate what happens to exceptional children and adults over such key transition points in their lives--the entrance into school, the movement from elementary to secondary school, and the transition from school to work or vocational activity, and the transition into adulthood and adult responsibilities (Gallagher, 1986b).
- Research should be conducted to study the changes in cognitive, social, and emotional development of exceptional individuals and the social dynamics of their interaction with others during a transition period.
- The database on transition experiences must be expanded. Currently, state education agencies can only estimate the number of handicapped individuals who make their way into the work force and the number who remain jobless despite service efforts.
- High school curriculum should be improved for a better relationship with the demands of post school services.
- Work is needed on the development and implementation of policies to provide earlier vocational planning and training as well as policies and procedures to move students more effectively from one service to another.
- Enhanced and expanded interagency planning of existing and needed transition programs and servies is needed.
- Increased post school services should be developed.
- A database should be implemented to systematically follow handicapped students into postsecondary programs, day programs, and competitive employment.

Getting an Early Start: Birth to Three

Since the passage of P.L. 94-142, there has been a rapid growth in programs for young handicapped children with a continuing emerging focus on the at-risk infant, birth to three years. Laws such as P.L. 94-142 and P.L. 98-199, research and demonstration results, and the increasing evidence of readiness for learning demonstrated by infants shortly following birth have interacted to bring about this growth.

Even with the growth in attention and programs, problems do exist. The federal government has gradually extended national policy to cover all handicapped children, birth to 21 years; however, not all state policy has kept pace. Unsatisfactory progress has occurred for young children because rulings and mandates have not always extended to include the infant and preschool population (Bricker, 1986).

As early childhood special educators address the futures of at risk infants, they face numerous and unique problem areas and issues. Key issues to be considered now and into the immediate future include: interagency coordination (local, state, and federal levels as well as public and private agencies); state mandates and how they are being implemented (states are using many different approaches to serve the birth to three population); parent involvement; work with pediatricians and other medical and health personnel; identification and assessment of at-risk infants; personnel preparation; curriculum models; and prevention (nutrition and prenatal care).

Unresolved Issues and Needs

Although they are still considered an underserved population, more and more handicapped and at-risk infants and toddlers are benefiting from early intervention programs. For the purpose of this chapter, let us look at just a selected few of the issues: school involvement, work with families, personnel, and research directions.

Who are the infants? Infants and toddlers who benefit from early intervention services can be classified into three groups: (a) developmentally delayed or disabled children who have congenital disorders, sensory impairment, neurological dysfunction, or significant delays in one or more of the major areas of functioning (e.g., cognitive, language, social-emotional, and motor development); (b) medically or biologically at-risk children with health factors that are known to be a potential threat to development such as prematurity and small size for gestational age; and (c) environmentally at-risk children whose physical or social circumstances, such as severe poverty, neglect, or abuse, may undermine their developmental progress (Zeitlin, 1986).

> Although children with apparently normal capabilities can compensate for early deprivation, it is less clear how adverse environments affect handicapped children. As a group, the handicapped infant and young child by definition have fewer resources with which to compensate for poor environmental input. It may be appropriate to assume that neglecting and abusive parents may have a greater and more enduring impact on handicapped children. Children who begin with a disadvantage, whether physical, sensory, or intellectual, are less well equipped to compensate for yet further deficits produced by uncaring or ill-informed adults. (Bricker, 1986, p. 30)

Where are these infants served? Location is decided by the geographical setting, resources available, and goals of the services available. Programs for the handicapped infants and toddlers may be home based, center based, or with some combination of agencies such as affiliates of United Cerebral Palsy and the Association for Retarded Citizens, mental health clinics, special day care programs, and schools.

The schools and infants--why? Why should the public schools move into an early intervention program? Certainly it is not an approach shared by everyone. However, Dr. Diane Bricker (1986) who has worked with infants and their parents for a number of years, has "sound reasons" for expanding the public school system to the education for at-risk and handicapped children:

> 1. The public schools are the only social-political institutions suitably equipped to assimilate educational programs for young children.
>
> 2. Waste is inevitable if parallel educational intervention systems are to be maintained for infants and preschool children.
>
> 3. One system should enhance the continuity of delivering services in a more normalized setting. (p. 375)

Family involvement is a must. The educational system to work with the handicapped infant must include the total family of the baby.

A family-oriented approach is important because the family is the primary environment for children under three years of age. Optimal development of the child is most likely to occur when the family is able to provide supportive and nurturing care. Therefore, early intervention programs assess the needs of the family as well as the child and in collaboration with the parents develop services to meet those needs (Zeitlin, 1986).

A trend now is for professionals to work with a family system instead of with the individual child. A handicapped infant or child impacts on all the faimly members including the siblings. Since a generation of research has demonstrated the influence of the family and the social ecology upon the adaptation of the individual, a family education plan, not an individual plan, is what is needed (Gallagher, 1986b).

Research can help. A prevention strategy would be to eliminate or reduce risk factors which appear to be linked to production of handicapping conditions. An increasing number of high-risk children are those with low birth weights. These children are now surviving where previously they would have died at birth. Infants born weighing 700-800 grams are approximately at a 50% risk for becoming handicapped.

Gallagher (1986b) identified some critical areas and potential approaches to solutions.

- A methodological problem hindering more sophisticated research into family and social interactions is the limited set of instruments available. Supporting agencies, in a deliberate and planned effort, should contract for the development of the needed instruments. Organized research units, centers, and institutes have the diversity of staff, stability, and support systems to conduct the long process of instrument development.

- Research to be most useful should be both intensive and committed to a long term. "In many instances, it should have a multi-disciplinary approach to it to reflect the wide diversity of needs and service delivery patterns used with exceptional children and their families" (p. 139).

Future Directions and Challenges

- Expand services to include children from birth through three. This effort requires significant interagency collaboration. No one agency can provide the range of educational, medical, and social service needs of this population.
- Conduct more rigorous research, particularly longitudinal studies on the efficacy of preschool programs.
- Expand preparation programs for early childhood education personnel.
- Promote legislation in every state to mandate indentification and programming for handicapped children down to birth.
- Provide high-quality undergraduate and graduate training in this specialized field.
- Promote high-quality day care programs that admit handicapped children.
- Develop reliable instruments for screening young handicapped infants, assessing critical aspects of their development.
- Work more effectively with families.
- Develop more sophisticated ways of evaluating programs.
- Provide funds to conduct research.

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Developments in Language Education

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Three recent developments in foreign and second language education present important challenges and opportunities for the language teaching field. The first is what is increasingly coming to be known as the "proficiency movement"--an initiative in which teachers and curriculum planners are finding effective ways to measure functional language proficiency and to tailor their programs to bring their students to pragmatically useful levels of speaking, listening, reading, and writing ability. This trend is as exciting as it is far-reaching because it offers the potential for establishing common goals of language instruction--as well as agreed-upon procedures for measuring success--at the same time as it allows a natural and healthy diversity in the specific teaching techniques used to attain these goals.

The second development, welcome but potentially problematic if not cautiously and thoughtfully implemented, is the introduction of the microcomputer to the language classroom. Foreign and second language educators need to be aware of the variety of options available in computer-assisted language learning. Once they understand the options, they should be able to find the optimum middle road between skepticism, distrust, and avoidance of computer applications on the one hand and, on the other, uncritical and unthinking adoption of any and all computer-based approaches--even those with serious pedagogical shortcomings--simply because of their technological glitter.

Finally, content-based language instruction--the simultaneous teaching of English and subject matter areas such as history or social studies to nonnative speakers of English--is increasingly of interest to curriculum planners and school authorities as a viable and cost-effective means of imparting subject matter knowledge in an academically rigorous way while at the same time developing students' proficiency in English. Effective means of cooperation between language teachers and content area teachers must be found, and suitable textbooks and other materials must be developed in order to attain this dual goal.

The Proficiency Movement

Proficiency in foreign languages is crucial to the United States' political as well as economic ties with the rest of the world. As an example of U.S. deficiencies in this area, a study by the International Association for the Evaluation of Educational Achievement and by UNESCO of 30,000 10- and 14-year-old students in eight countries ranked American students next to last in foreign language competence (Carroll, 1975). As the world becomes increasingly interdependent, the importance to the United States of encouraging genuine foreign language competence is regaining recognition both by the government and within education. No longer can foreign language study be viewed as primarily an academic exercise culminating, for a select few, in the appreciation of literary classics; it is now a vital practical endeavor for every American student, an endeavor whose goal is the effective use of foreign languages in real-life situations.

Steps Toward the Proficiency Orientation

In the 1950s, the Foreign Service Institute (FSI) of the U.S. Department of State developed a verbally defined scale of language proficiency and an interview-based testing procedure that were intended to reflect the linguistic requirements of the jobs that foreign service personnel are expected to fill overseas. Jobs were observed directly and analyzed to determine the nature and level of spoken language ability required for success. The resulting scale specified five separate levels of increasing proficiency, ranging from Level 1--the so-called "survival level"--through Level 5, representing proficiency indistinguishable from that of an educated native speaker (Sollenberger, 1978).

Over the next several years, the FSI proficiency scale was further developed, and more detailed descriptions were prepared for each proficiency level. These were formally endorsed in 1968 by the Interagency Language Roundtable (ILR), a consortium of about 30 government agencies concerned with foreign language training and evaluation. In the early and mid-1970s, the procedure was expanded to other government areas such as the testing of Peace Corps volunteers, and the proficiency scale and interviewing technique also began to receive greater attention within the academic community. Recently, five states (California, Florida, Ilinois, New Jersey, and Texas) have adopted speaking ability requirements based on the proficiency scale as part of the certification requirements for bilingual teachers.

Gathering Momentum in the Schools

In the late 1970s and early 1980s, Educational Testing Service (ETS), the American Council on the Teaching of Foreign Languages (ACTFL), and other language-related organizations worked cooperatively in the further dissemination of information about the proficiency scale and interview at both the secondary school and college levels. This effort also included the refinement and expansion of the lower level of the scale to better accommodate measurement needs at the early stages of language instruction. The ACTFL Proficiency Guidelines describing these levels were drafted in 1982 and revised in 1986 (ACTFL, 1976).

The capability now exists for proficiency-based testing and curriculum development to be implemented within a large segment of the foreign language education field, and several relevant initiatives have already been started.

Wing and Mayewski (1984) have developed a handbook on oral proficiency testing for college foreign language programs. Northern Arizona University has received a grant from the U.S. Education Department to prepare guidelines for articulation between high school and college language programs, based on proficiency-based curricula and assessment procedures. ACTFL and other organizations have developed and offered a variety of workshops in this area for teachers and supervisors, ranging from half-day familiarization sessions to considerably longer and more intensive tester training programs.

Proficiency-based assessment--which Higgs (1984) has referred to as the "organizing principle" for the language teaching process--holds major implications for materials development, teacher training, and program design within the language teaching field. Fortunately, the "proficiency movement" is not a revolution that will require wholesale rejection of current methodologies and materials, most of which already include or can be adapted to include effective proficiency-developing elements. A potentially greater problem is that many teachers themselves have only a modest level of proficiency in the languages they teach--a situation uncovered by a 1981 ACTFL survey (Paul, 1981). Although the overall level of language competence of teachers newly entering the field can be raised through proficiency-based certification requirements, a similar upgrading of skills on the part of the existing teacher pool will require a variety of inservice training activities--including, especially, carefully planned experience abroad--that have yet to be implemented on a widespread basis.

Through workshops, published materials, and other means, language teachers throughout the country are becoming increasingly familiar with the ACTFL proficiency guidelines and with measurement techniques that can be used to assess their students' proficiency levels. In addition--and even more crucially--educators who become knowledgeable about the fundamental concepts underlying proficiency-based assessment are beginning to perceive the important ramifications these concepts have for classroom teaching practices and for the development and adaptation of teaching materials.

It is not overstating the case to say that proficiency concepts, as they are being elaborated and disseminated within the field today, have major implications and potential benefits for virtually all areas of foreign language education. Teacher training, the development of textbooks and other instructional materials, classroom practices, course sequencing, and means of assessing student progress will all be viewed increasingly from the standpoint of the ability to use the language effectively in real-life communication settings.

Computer-Assisted Language Learning

Microcomputers and their associated instructional software are more and more in evidence in the nation's foreign and second language classrooms. Indeed, the rapidly growing number of computer-assisted language learning

(CALL) programs on the market present the language teacher, department chairperson, or other decision maker with the difficult task of making wise and pedagogically valid choices from among the many options available. Educators' responses to the instructional possibilities presented by CALL have included two opposite--and both undesirable--extremes: some reject CALL materials altogether, while others embrace them uncritically. These two stumbling blocks aside, the languge teaching profession has a pressing need to develop guidelines for selecting and using CALL programs that will most effectively advance the language learning process.

At least four major questions need to be addressed. First, how can computers be made more accessible to language learners, both physically and in terms of "user-friendliness? Second, what criteria should be used to evaluate available software and to guide the development of new CALL materials? Third, in what ways and to what extent can CALL be integrated within a total learning system that includes a live teacher, interacting students, and other noncomputerized instructional media? Fourth, how does CALL compare with other modes of language instruction in terms of its success in developing students' second language skills?

Accessibility

As is often the case with technological applications in the U.S. school system, math and science classrooms were among the first to benefit from the introduction of microcomputers and associated software programs, with the result that subject areas such as music and foreign languages have had to wait their turn. However, the initial imbalance with respect to equipment and software availability has begun to be corrected, with encouraging signs that the necessary facilities are increasingly available to all areas of the curriculum. A recent survey (Becker, 1985) found that the number of computers in schools had quadrupled in the preceding two years and the number of students using them had tripled. Becker estimates that more than one million microcomputers are now in place, mostly in secondary schools, and are being used regularly by approximately 15 million students.

Availability of microcomputer equipment within a given school setting does not guarantee accessibility to either the teacher or the student. For too many instructors, the technological aura of the computer is an impediment to even attempting to make use of its capabilities. For those who are willing to at least give the computer a try, unfortunate experiences with poorly designed or error-ridden programs may be a source of frustration and eventual rejection of this technology. Although students may typically be less in awe of the computer than instructors, their learning attempts may be frustrated by software that does not meet basic standards of accuracy, freedom from programming errors, and so forth.

Before CALL can reach its potential in the typical school setting, the basic problems of equipment availability and "user-friendliness" must be satisfactorily addressed. Thanks to the constantly decreasing costs and greatly increased availability of microcomputer equipment, the hardware problem seems well on the way to being resolved. Increasing sophistication on the part of language teachers and other professionals in the field concerning the attributes of a quality software program, and the healthy market competition that their feedback produces, may contribute appreciably to the technical and pedagogical upgrading of available CALL materials. Language teachers can share their experiences with specific software programs through newsletters, user groups, and conferences. Research comparing achievement results with and without CALL and among different CALL applications will provide essential feedback to the computer industry. In turn, software publishers should more actively seek to understand teachers' needs and provide inservice training to address them. Improved communication in both directions will foster the development and use of the microcomputer as a viable component of foreign language instruction.

Guidelines for CALL Software Development and Review

The language teaching profession has not yet arrived at even a rough consensus on the particular areas of the curriculum in which CALL efforts might best be focused. Many of those closely involved with CALL developments emphasize the computer's strengths in tirelessly (and nonjudgmentally) presenting a variety of information and exercises to the student, with which the student can work at his or her own pace and level. For this reason, much currently available software provides drill and practice with formal aspects of language: vocabulary, grammar, spelling, and specific usage problems.

More innovative uses of CALL for English as a Second Language (ESL) and foreign language learning are described by Wyatt (1984) and Hope, Taylor, and Pusack (1984) respectively. The technical capacities of the computer make it well suited for presenting reading material in the foreign language, and, with suitable auxiliary equipment, listening comprehension passages and exercises. Controlled writing activities are also possible to a certain extent. Although available computer equipment and programming cannot readily offer computer-assisted practice in speaking on the student's part, there have been several attempts to develop such capabilities. These include a system described by Wyatt (1984) in which student utterances are captured in digitized form and compared with a reference standard. If the utterance deviates too far from the model, the student is instructed to try again. A less expensive, but less realistic, means of providing speaking practice is the ELIZA program, which offers a simulated conversation conducted in writing on the computer screen using a selection of "scripts" as the basis for interaction with the computer. The near future should bring the schools more affordable interactive videodisc equipment, which can provide audiovisual stimuli and interactive instruction with push-button speed and accuracy (Johnson, 1985).

Regardless of the particular skills a CALL program is designed to address, commonsense guidelines can be followed in assessing the instructional suitability and general quality of the program. Programs should first of all be free of technical errors that may cause the entire program to "freeze" or that put the student into an endless loop of repeated actions.

A second major desideratum is for the program to interact flexibly with the student so that, depending on the student's particular responses, the program can "branch" to the next item that is immediately relevant to that student's learning needs. Flexible programs, especially those that offer problem-solving tasks, invite interaction among pairs or small groups of students, which has long been recognized as an effective catalyst for learning (Johnson, 1985). Completely "linear" programs that have all students follow exactly the same path are much less suitable.

Third, higher-quality programs allow the instructor to modify or augment the content according to immediate needs. For example, a vocabulary training program that allows the instructor to add or substitute particular lexical items of his or her own choosing may be considered more flexible and of greater potential teaching value than a program that does not permit such modification.

A fourth desirable characteristic is for the CALL program to accept, and to interpret as correct, more than one possible answer to a given question. Just as the "real world" (as well as the classroom teacher) admits of more than one way to phrase a response in a given language-use situation, the computer program should be able to accommodate a reasonable degree of variability in students' responses.

Finally, CALL programs, regardless of their specific instructional goals, should relate beneficially to the student from the psychological or affective standpoint. For example, programs that provide encouragement in the form of frequent reinforcement of correct answers, as well as non-threatening indication and remediation of incorrect responses, are preferable to programs with less sensitive approaches to error correction and other aspects of computer-student interaction.

Toward a Systems Approach to Computer-Assisted Language Learning

Given the differing--and largely complementary--capabilities of the computer and of the live instructor, the best approach to finding an optimum role for CALL within the foreign and second language teaching field is probably to adopt a "systems analysis" view of the entire instructional process. Under such a view, CALL would be seen as one of several possible components of instruction, along with regular textbooks, other types of print and nonprint media, the classroom teacher, native speaker resources, travel abroad and other opportunities to use the language, and several other types of experiences that would be expected to provide an adequate and appropriate learning environment for the student. Within this environment, some or all of these resources would be used in different but integrated ways, based on the particular instructional strengths of each type of resource and the overall learning objectives of the program. For example, given the fact that present computer equipment and programming capabilities do not readily permit computer-assisted practice in speaking, it may be more appropriate, from a "systems" point of view, to defer attempts to implement CALL in the student speaking area, at least for the time being, and to assign this important role quite frankly and legitimately to the classroom teacher. On the other hand, the obvious strengths of the computer in providing practice in and reinforcement of various aspects of grammar, vocabulary development, reading comprehension, and so forth, would suggest that these particular aspects might be largely delegated to the computer, with a resulting overall increase in the efficiency and learning yield of the total instructional process.

Although a thoroughgoing systems-analytic approach to foreign/second language learning--which would include CALL as well as many other techniques and resources as potential components--has yet to be fully developed, the general concept is a useful one and may help to identify the most effective place for computer-assisted techniques within the framework of language instruction as a whole.

Evaluating the Results of CALL

It is fair to say that, although the potential effectivenss of CALL in enhancing student language achievement is generally accepted, little experimental evidence addresses this assumption. In an important recent study, Robinson (1985) found that students who underwent each of a variety of language learning exercises on a microcomputer performed in virtually every instance at a higher level than a control group. Dunkel's (in press) view of research on CALL concludes that the evidence so far on CALL as a supplement to regular instruction is positive, although some studies document poor retention levels.

The overall impact of CALL on the total language learning experience has yet to be investigated in a scientifically rigorous manner. This investigation will probably have to await the development of CALL software that is integral to the instructional program rather than simply providing occasional or supplementary assistance to the classroom teacher. In addition, such research represents a major evaluative task that will require substantial technical and financial resources. In the meantime, the best approach to implementing and evaluating CALL technology in the foreign/second language teaching field will probably be for teachers, supervisors, and others involved in the instructional process to simply exercise good will and good sense in considering the potential applications of CALL in their own particular teaching situations.

English through Content

Procedures for the integration of subject matter content and language instruction are of potential interest to all language teachers, but especially to those teachers of English as a second language (ESL) who are responsible for helping language-minority students acquire the linguistic skills needed to profit fully from academic instruction in English. This concern has increased with the influx of limited-English-proficient (LEP) students from all over the world into the United States school system. In Philadelphia's public school enrollment, for example, 74 language backgrounds are represented (Benevento, 1985).

The heightened interest in content-based language instruction comes at a time when language acquisition research is seriously questioning the efficacy of instruction that focuses on linguistic rules taught in isolation from subject matter (Mohan, 1986). As with proficiency-based foreign language instruction, the primary characteristic of content-based English language instruction is its emphasis on the use of the language in meaningful and relevant contexts, which in the latter case is the language of the subject matter classroom and textbook.

The "Sheltered-English" Approach

The "sheltered-English" approach--ESL that specifically addresses the content areas of math, science, or social studies--can aid the transition of LEP students into the mainstream of U.S. education, especially in comparison with the more typical ESL instruction that focuses only on general or social language. A major advantage of the sheltered-English approach is that the students receive specific practice in understanding and using academically oriented discourse, a type of language that many of them have not encountered before even in their native languages.

Cummins (1981) draws an important distinction between general sociolinguistic abilities, which he terms basic interpersonal communication skills (BICS), and the kinds of language called for in school settings, which he designates as cognitive academic language proficiency (CALP). Particularly characteristic of CALP is the ability to understand and use written language and even oral language in environments where little support of the meaning is provided by nonverbal or visual cues or through shared background knowledge. Although BICS can be developed through conventional ESL instruction, augmented by the student's own exposure to and practice in using social language outside of the classroom, the acquisition of CALP is viewed as a longer-term effort that requires a schoolwide, team-based approach for the greatest effectiveness and level of success.

The Team Approach to Content-Based Instruction

Since virtually every school in the United States has some number of LEP students, it is vitally important to establish close cooperation and joint curriculum planning and teaching between ESL teachers and content area teachers. Although content area teachers may be uncertain regarding their role in the language development of LEP students and may initially resist becoming involved in such a venture, this may be overcome in large part by emphasizing the need to focus on students' academic skill deficiencies in all aspects of the school curriculum, regardless of the subject being taught in a particular classroom. The cultural diversity and linguistic richness the LEP students bring to the school should also be stressed as a positive factor.

A variety of inservice and preservice activities can be implemented in a team approach to content-based language instruction. For example, by observing trained ESL teachers, content area teachers can learn to modify their own classroom language to avoid complicated constructions and obscure expressions, as well as to give visual support for the meaning of the language by conducting demonstrations, increasing the number of visuals they use, and so forth. ESL teachers, for their part, can plan their classroom work in consultation with the content area teachers in order to coordinate their instruction with the particular topics being taught in the subject matter classes. Vocabulary development, in particular, can be pursued in a pre-planned, consistent manner in both ESL and content area classes. This is an especially important undertaking since a student needs repeated exposure to new vocabulary items in a wide variety of contexts in order to thoroughly master the words' visual, auditory, and semantic attributes. Both ESL and content area teachers must also become sensitive to students' varying linguistic and cultural backgrounds so as to avoid, for example, inadvertently using an inappropriate form or style of address when calling on a student in class. Close attention to these small but significant matters can be fostered through properly designed preservice and inservice training.

Chamot (1985) offers the following guidelines for program planners interested in developing an effective program of content-based language instruction:

1. Clearly define the instructional objectives of the program, with a major focus on having the LEP student, by the end of the program, fully able to participate in regular "nonsheltered" environments.

2. Plan curriculum and course content based on the instructional objectives.

3. Plan and conduct joint inservice training with ESL and content area teachers.

4. Develop or adapt teaching materials as necessary to support the instructional program.

5. Plan and implement appropriate assessment procedures.

Promoting Interactive Opportunities

Chamot and Arambul (1985) illustrate the ways in which the science classroom can lend itself especially well to LEP student language development. For example, when students are physically involved in scientific experiments, they have natural opportunities to discuss what takes place in these experiments. When LEP students make oral or written reports, their teachers can focus on the conceptual content and not be overly critical of language errors. By the same token, nonverbal responses such as student-produced sketches and charts allow beginning-level LEP students to display their cognitive capabilities while control of the language is still being developed. When science is taught in a hands-on, interactive way, LEP students can share knowledge, hypotheses, and experiences with their English-speaking peers in creative, functional ways at the same time as they develop higher-level thinking skills.

Materials Development Needs

A recent major seminar sponsored by the U.S. Education Department-supported Center for Language Education and Research (Crandall, Willetts, Mohan, & Curtain, 1986) concluded that in addition to the need for establishing effective inservice and preservice training programs for content-based language teaching, there is a critical need for instructional materials specially designed for the content-based programs. Although the writing or adapting of existing materials at the local level may provide an interim solution, this procedure is not an effective use of staff time and resources from the global, long-term point of view, since it in volves reinventing the wheel in each particular setting. What appears to be needed is the involvement of major publishers in producing textbooks that parallel or supplement current texts and can be used in a sheltered-English context while LEP students are developing their English language skills. However, since these students will eventually exit to a regular academic environment, the subject matter content of these texts must not be diluted--such an approach would deprive the students of the academic boost that the sheltered-English approach is intended to provide. In this regard, it should also be emphasized that a properly planned "sheltered-English textbook" series would need to incorporate increasingly sophisticated language so that, on completion of the program, LEP students would be in a position to handle native speaker materials as easily as their native-English-speaking classmates.

Future Directions

Although the future of foreign and second language teaching efforts in the United States cannot be predicted in detail, the general outlines can be conjectured, assuming that each of the three major initiatives described here continue to develop and expand appropriately. If so, the 1990 edition of this Yearbook might contain the following observations:

The "proficiency movement" has led to widespread adoption of verbally defined levels of language competence as a "common metric" of achievement in second language learning. Students, teachers, parents, school board members, college admissions officers, state and federal agencies, multinational corporations, and other individuals and organizations have all developed a good working familiarity with the real-life performance ability represented by each level of the proficiency scale. This information is used extensively in connection with student course placement, curriculum design, teacher certification, language program evaluation, employment applications for jobs requiring foreign or second language competence, and in a variety of other settings. Periodic surveys of the proficiency levels attained by high school and college graduates give clear and readily interpreted statistics showing the "national yield" of language-competent Americans.

Developments in the area of computer-assisted language learning, together with the constantly increasing availability of microcomputer equipment, have made the computer virtually as commonplace as the textbook in the nation's language classes. Despite some earlier fears, the computer, far from replacing the live teacher, has freed the teacher to concentrate on facets of the overall language learning process for which human interaction is of the greatest importance, including especially face-to-face conversation. The computer, for its part, has taken over the task of providing the student with a wide variety of oportunities for individualized practice, especially in reading and listening comrehension, in the methodical, tireless manner that is the hallmark and true strength of CALL.

A valuable byproduct of the advent and increasing use of CALL is the fact that teachers and school systems have begun to think of language teaching and learning as an integrated process involving not only the teacher and the computer but also many other types of learning media and opportunities. Both computer-based and noncomputerized self-study materials are increasingly developed and used in both formal and informal settings. Thanks to satellite technology, television programs from other countries are widely received and used for language practice in both schools and homes. Opportunities to travel and study abroad are used to greater advantage as a result of predeparture instruction in how to maximize the language learning yield of these experiences. In sum, bringing the computer into the instructional picture has encouraged teachers, curriculum planners, and others to broaden their view of the language learning process to include many other highly effective practices that might not otherwise have been considered.

In the nation's classrooms, a large majority of the teachers of math, science, social studies, and other subject matter have received explicit training to be able to conduct their classes so that they facilitate comprehension by limited-English-proficient students at the same time as they maintain full pedagogical rigor. ESL teachers, for their part, are fully knowledgeable about the content and sequencing of instruction in the other areas of the curriculum, and plan their own teaching so as to emphasize the particular vocabulary and other aspects of the language that are most relevant to the other subject matter areas at any given point in the school year. As a result of this planned, synergistic approach, students whose native language is other than English have the opportunity to learn English rapidly and effectively while simultaneously acquiring the subject matter skills being taught in the regular school curriculum.

Taken together, advances in the three areas of proficiency-oriented language instruction and assessment, computer-assisted language learning, and cooperative, contentbased ESL and subject matter instruction have added up to a large and continually growing number of language-competent U.S. citizens. These individuals have attained a pragmatically useful level of functional competence both in English and in at least one other language that is of economic, social, or cultural value to themselves and--by the same token--to the nation as a whole.

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EMERGING TRENDS IN HIGHER EDUCATION

Judy Diane Grace and Jonathan D. Fife

Most critics see the current interest in the condition of higher education as a result of two movements at work in the larger arena of society. One is a general reform movement aimed at elementary and secondary education. Some say this movement has populist origins; others say it is an attempt to recast our educational philosophy and practices, so that the United States can regain its leadership role in economic development. Regardless of the motivation, much scrutiny has been given to K-12 education in the past decade. This scrutiny has now logically moved on to higher education.

The second movement that has precipitated the attention given to higher education is really the convergence of several trends (demographics, increased accountability, fiscal shortfalls) and events (national reports, federal budget reduction legislation) at a time when the resources of higher education are not sufficient to maintain the quality and productivity Americans and the world have come to expect from our educational system. These trends involve changing student characteristics, assessment and accountability issues, changing faculty characteristics, issues involving management and planning strategies, and program and curricula structure characteristics. It appears that the conditions brought about by these trends strain the system so that problems cannot be contained and the promise cannot be nurtured.

Much has already been written about the condition of higher education and the trends affecting it. There have been four national level studies on this convergence of the two movements (Involvement in Learning, To Reclaim a Legacy, Integrity in the College Curriculum, and Higher Education and the American Resurgence) and any number of scholarly and popular commentaries on it. This chapter, then, summarizes the current literature on the trends that dramatically affect collegiate institutions and state and federal level agencies concerned with higher education. The chapter can only describe the conditions beneath the swell of the tidal current. It will be up to the readers of this chapter to develop specific strategies to ensure a more predictable climate for higher education in the future.

Student Characteristics

There are several trends in student characteristics that will have significant impact on what and how we teach in higher education. These can generally be grouped into two areas: demographic characteristics and academic characteristics. The first set describes the changing nature of the student pool and the student body, and the second deals with students' preparation for college and career aspirations as they affect certain academic choices.

Demographic Characteristics

The changing nature of students in terms of age, race, and sex is well discussed in both popular and scholarly journals. Although certain kinds of institutions feel the changes more quickly than others--for instance, community colleges, or more intensely, graduate level training centers for the professions--nearly every institution has experienced some shift in the characteristics of their students. These trends as generally described in the literature are summarized in the following paragraphs.

In terms of sheer numbers, one study estimates that 5.2 million students were enrolled in public four-year institutions of higher education in the fall of 1985 (National Association of State Universities and Land Grant Colleges [NASULGC], 1986), a number slightly less than that of the previous year. Of this, a surprising increase of 3% was shown in first-time, full-time freshmen. The class of 1989 has several distinguishing characteristics reflecting changes in demographics, changes which may suggest a re-examination of programs, scheduling, and admissions, among other considerations.

The most striking demographic change is that now over half the students enrolled are women. While females have increased their rate of enrollment by 37% over the past decade, males have increased by only 3.5% (El-Khawas, 1986). Women enroll at higher rates at every kind of institution, and in the vast majority of programs. Their attendance at certain types of schools is dramatic. Community colleges first felt the effect of this trend, which now is making a significant impact on programs in graduate and professional education.

The status of students is also of note. According to the current American Council on Education's (ACE's) Campus Trends report (El-Khawas, 1986), higher education is experiencing its sixth continuous year of decline in the 18-year-old group, from which the majority of first-time, full-time enrollments have traditionally been derived. This trend has affected enrollments in a variety of ways. For example, while one-third of institutions reported an overall increase in enrollments for fall 1985--including at colleges and universities, increases in graduate students and, at community colleges, continued increases in part-time enrollments--there is an overall sense that enrollments are, at best, stable. Figure 1 illustrates changes in full-time equivalent enrollment.

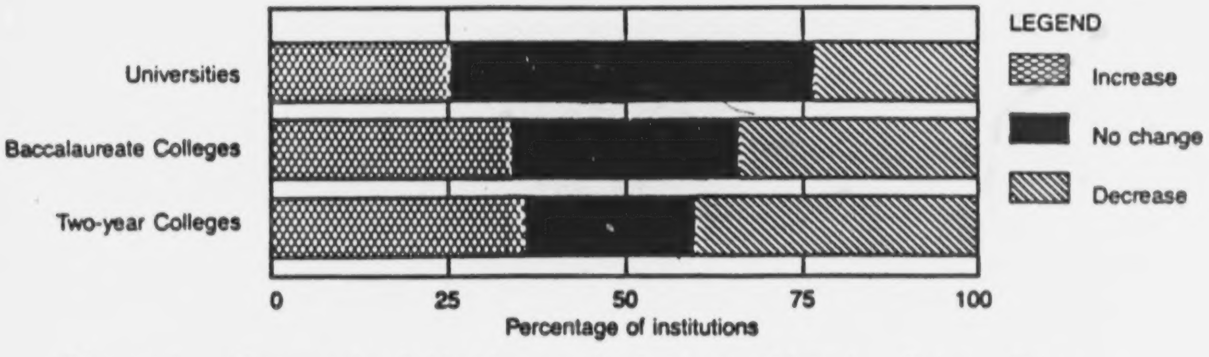

Figure 1. Changes in full-time equivalent enrollment. Note. From Campus Trends, 1986 by E. El-Khawas, p. 8. 1986, August, Washington, DC: American Council on Education. Reprinted with permission.

Another characteristic difference in the enrollment profile in this decade is the age and ethnic background of the students. The median age continues to increase at almost all types of institutions, especially at baccalaureate and two-year institutions. Traditionally, the older student attends on a part-time basis. Many institutions are reporting decreases in full-time equivalency students, and this decrease may have a direct effect on formula funding for many state supported institutions. A very recent report finds a 3% increase in the number of part-time enrollees for Fall, 1985 (NASULGC, 1986).

Additionally, the ethnic background of students is changing. Nationally, black students enroll and continue at notably lower rates than in immediately previous years, although full-time enrollment is up significantly (8%) at public institutions historically black. Asian Americans continue to enroll and complete at dramatically higher rates (Butterfield, 1986). Enrollments of students with citizenships outside North America continue to increase.

These fluctuations in enrollment differ also by region. The trend toward increased minority enrollment is more dramatic in the western and southwestern states, where Hispanic enrollment continues to increase at over one-third of the institutions surveyed by ACE. Hispanics have increased their rate of enrollment nationally by 48% over the past decade. Asian Americans enroll and complete at higher rates in both eastern and western institutions. In midwestern universities, black enrollment is declining (El-Khawas, 1986).

Students' socioeconomic status (SES) seems to affect the kind of institution they attend. The basic correlation is that the lower the student's SES, the lower in the hierarchy of institutions the student attends; the least academically advantaged students and those from the least educated families are not well represented at the "best" institutions (Astin, 1985). This profile suggests that educational equity has not been successfully attained through our student financial aid policies or by our admissions practices.

As state and federal support for higher education decreases and tuition and other educational costs increase, an increasing number of students will have reduced options on selection of institutions or will graduate with a large debt from student loans. Still others will not be able to afford college at all or will find the need to put priorities on college in relation to other life activities, such as child rearing. Some researchers feel that attendance in higher education is linked to the general economic health of the country, and when the economic outlook is perceived to be good, families are more inclined to think they can afford college (Watkins, 1984). Others feel that with high unemployment, there is nothing to do but go back to school.

Minorities who are less inclined to secure loans for educational purposes will have yet another barrier placed before them. Even middle-class students may feel more inclined to attend more inexpensive state schools rather than private colleges. An even greater strain is projected to occur for the graduate and professional student who has already put several years into training for a profession, years that will be relatively useless unless the training is completed (Fiske, 1986).

This indebtedness also has impact on society in general. For example, the size of the loan program in 1986 is estimated to be in excess of $50 billion (Cronin, 1986). This amount constitutes a significant part of higher education's $102.2 billion dollar budget for 1985-86, 2.5% of the GNP (Higher Education and National Affairs, 1986, July 28). There are those who argue that the need to repay loans will influence student career choices, diverting students from lower paying careers in human services and decreasing altruism among college graduates who must repay educational debts rather than invest in the general society (Kramer & Van Dusen, 1986).

On another level, the fear of indebtedness affects student access. The more affluent and better educated classes are disproportionately represented in the top institutions. Students from upper SES levels have greater access to the institutions more likely to confer greater educational and economic opportunities (Astin, 1985). In particular, the four largest disadvantaged minority groups--blacks, Chicanos, Puerto Ricans, and American Indians--are underrepresented relative to whites at each level of degree attainment, especially at the graduate and professional levels. While minorities may have better legal access to educational opportunities than they used to, the increased costs weighed against returns and perceived likelihood of completion discourage these students from investment in student loans.

Academic Preparation

The preparedness, or more appropriately the underpreparedness, of students today presents institutions with numerous challenges. The issues associated with the challenges touch many aspects of our society, most especially the K-12 system. For institutions and their funding sources, the task of providing comprehensive educational experiences at all levels is complicated by the underpreparedness of students. For society, the concern may focus on the issue of whether we have training and standards adequate to assure the development of the manpower in our nation.

That students are coming to college underprepared in some way is not debated; it is accepted as fact (Cross, 1971). The well publicized decline in standardized test scores until the past few years provoked public sentiment toward educational reform. It is only recently that the College Board has been able to report more than a one-point increase in the verbal score on the SAT (Phi Delta Kappan, 1985, November). The all but universal concern for student attainment of the basic communication skills has, among other things, threatened to change the job of the classroom instructor in all disciplines and at all types of institutions. For example, Astin (1985) reports that at UCLA, half the freshmen are required to take a non-credit remedial English composition course.

Many scholars argue that the raising of admissions standards as a solution will further stratify our society, especially in terms of minority attainment at the higher level (Astin, 1985). Such a strategy, they suggest, is not consistent with public policy (Green, 1982) and creates more immediate problems than it provides long-term solutions.

There is also a growing acknowledgment that even students who qualify academically are not fully prepared to use the collegiate experience in as positive a way as possible. For example, students who must work excessive hours to pay for their education or who select majors based on potential income in order to repay student loans do not have equality of choice in the educational experience. Students who are distracted by inadequate daycare for children and class schedules that do not fit their lifestyles are bound to receive less than a quality education.

Program Choice

Compounding the concern about financing higher study is, as was mentioned earlier, the apparent trend among students to consider salary upon graduation when choosing college majors. In addition, students choose academic majors in response to shifts in manpower needs. Trends in choices of majors reflect these responses. Table 1 illustrates trends in student degree majors:

Table 1

Bachelor's Degrees Conferred by Institutions of Higher Education

PROGRAM AREA	1973-74	1983-84	% Change*
Business/Mgt	131,766	230,031	75%
Communications	16,250	38,586	137
Computer/Info Sci	4,756	32,172	576
Education	185,225	92,382	-50
Engineering	42,840	75,732	77
For. Languages	18,840	9,479	-50
Health Sciences	41,394	64,338	55
English	55,469	33,739	-39
Library/Archival Sci.	1,164	255	-78
Life Sciences	48,340	38,640	-20
Mathematics	21,635	13,211	-39
Phil/Religion	9,444	6,435	-32
Physical Sciences	21,178	23,671	12
Psychology	51,821	39,872	-23
Social Sciences	150,298	93,212	-38

*Minus sign indicates declines

Note. Source: Center for Statistics, U.S. Department of Education.

The salary offers to candidates for degrees in these fields give some insight into probable reasons for selection of certain college majors. In 1984, beginning salaries for accounting majors were $1,627 per month. Computer major students were offered $2,046, while engineering majors received $2,220. On the other hand, humanities majors received offers of $1,380 per month (College Placement Council, 1985 in U.S. Bureau of the Census, Statistical Abstract: 1986).

These shifts present both a picture of changing needs and a blueprint for planning. For example, with the anticipated teacher shortage facing the public schools, incentive funding in the form of financial aid packages might be used to induce students to major in education.

The number and kinds of problems facing institutions as a result of changing student characteristics are all but boundless. The shifts in student learners' needs and demand for programs come at a time of diminishing support for higher education both fiscally and perhaps philosophically. Institutional stress is understandably high.

Assessment

The current mood of consumer-as-king in our society has no doubt influenced the way we regard assessment of the learning process and evaluate the entire institution of higher education. Assessment is not a new concept in higher education, but it has taken on new implications in these times of reduced resources and increased accountability. In the literature, issues of assessment focus on student performance and institutional performance.

For most of its history, higher education has been its own assessor. In the classroom, the instructor has been the primary evaluator of student performance. It has been the institutions that determined the admission standards for themselves and in this way influenced what was taught in the K-12 system. Now concepts and methods of student assessment have begun to change and others are asking for a say in how standards are set and followed in higher education. In turn, the institutions are being held to standards established by outside agencies, a situation of some threat to many who view the academy as self-monitoring.

On the classroom level, new students have created the need for different teaching and evaluating techniques. The adult as learner has needs and uses for information not necessarily addressed by traditional learning and teaching methods. Within the past two decades, educators have come to a consensus that indeed the theory of adult learning, andragogy, is different from that of children, pedagogy (Knowles, 1973; Weathersby,1980). The implications for classroom instruction and its alternatives are too extensive for discussion here, but by way of example, the restructuring of the class "hour" to better accommodate adult learning spans and the use of group instruction are examples of strategies utilized to make the learning environment more productive for the adult (Cross & McCarten, 1984). These new demands upon faculty and institutions will require a commitment and an investment of resources.

Of course, the adaptation does not end with instruction, but also focuses on assessment. Most institutions now have procedures in place to deal with nontraditional learning, e.g., the College Level Examination Program (CLEP). No longer is the college prep high school course the only route to attaining admission to higher education. The growth of community colleges in our recent history and the expansion of extension center education from major research institutions also evidence a new definition of college attendance. The awarding of the degree is no longer seen as the sole measure of the accomplishment of the aims of a college educatioh.

Naturally, these shifts in teaching and evaluating bring about some inconsistency and adjustment problems. In addition, the so-called revolution of the 1960s opened up the college curriculum in a way that has not lent itself to easy closure. Much of the experimentation of that time now manifests itself in slight modifications of admission and program requirements.

This seemingly confused state within the institutions has led, in conjunction with a societal desire for more information for accountability, to evaluation methods being placed upon institutions by outsiders. For example, several states are now experimenting with "rising junior" examinations, designed to measure student attainment of basic information as a result of the experience of attending colleges for two years ("State Initiatives," 1985). Other states have placed strong testing requirements on persons wishing to enter occupations for which previously the only requirement was the attainment of a college degree in the field; state-level teacher examinations now being required in many states are examples of this kind of assessment. The literature reflects the great amount of debate surrounding this trend (Astin, 1985) and signals a continued period of adjustment to externally imposed criteria. Even among administrators and faculty, there is disagreement about appropriate methods of assessing student learning. Table 2 from E. El-Khawas' Campus Trends, 1986 illustrates this discussion.

Table 2

Appropriate Methods of Assessing Student Learning

	2-Year Colleges	Baccalaureate Colleges	Universities	Total	Public	Independent
College-level skills tests	61	70	55	62	62	62
Tests in general education	48	71	51	55	52	59
Comprehensive exams in major	46	82	67	61	51	73
Attainment of "higher order" skills in:						
Critical thinking	69	89	79	77	73	82
Quantitive skills	74	88	83	80	75	84
Oral communication	83	88	82	84	81	88
Writing	85	91	87	87	84	90
"Value-added" measures	62	80	64	67	65	70
Placement tests, Mathematics	95	95	89	93	98	88
Placement tests, English	95	88	89	92	99	83
Placement tests, Reading	93	78	71	84	93	73
Placement tests, other skills	75	59	64	68	70	65
Pre- & post-tests, rememdial	85	78	67	79	90	66

Note. Weighted survey data (80% response) received from 365 institutions (129 two-year colleges, 71 baccalaureate colleges, and 165 universities). Percentage agrees for each type. From Campus Trends, 1986, by E. El-Khawas, p. 15. 1986, August. Washington, D.C.: American Council on Education. Reprinted by permission.

These examinations of student performance are also aimed at assessing how well institutions are doing their jobs. Especially among state supported institutions, interest in improved effectiveness and efficiency has grown dramatically, both as a result of grass roots interest and as a result of the national level reports on the status of education. The limited resources on which a state must draw in providing services to its citizens and the competition for those resources have made the issue of accountability more than academic.

Institutions have been undergoing assessment of their effectiveness for most of their history. Nationally, the process of voluntary accreditation has for a long time satisfied the state about the institution's effectiveness. Now colleges and universities are being asked to demonstrate that they are doing their jobs, that they are using funds and resources effectively and efficiently to develop the talent within a state, on several additional criteria. Again there is great discussion about which measures are appropriate. Table 3 illustrates this debate.

Table 3

Appropriate Measures of College Effectiveness

	2-Year Colleges	Baccalaureate Colleges	Universities	Total	Public	Independent
Retention/graduation rates	89	87	87	88	87	89
Degrees/certificates awarded	78	71	79	76	79	73
Pass rates/prof. licen. exams	82	75	84	80	87	72
Students served	76	69	67	72	77	65
Courses comp./credits earned	81	77	70	77	78	76
Test scores of grads (prof.)	58	65	80	66	67	65
Test scores, other graduates	56	52	67	58	55	61
Other measures of student learning	75	89	77	80	75	85
Percent going for further ed.	79	71	79	77	76	78
Achievements, recent graduates	75	86	83	80	75	86
Job placement rates of grads.	92	92	82	90	90	90
Grads' performance on the job	89	78	74	83	86	78
Ratings by graduates	82	82	84	88	91	84
Long-term outcomes of grads	82	95	83	86	81	91
Achievements of faculty	73	83	94	81	80	81
Instit. accomplishments in:						
Grants/contracts	63	53	83	64	67	61
Community services	81	68	85	78	87	67
Research	34	44	87	49	48	49

Note. Weighted survey data (80% response) received from 365 institutions (129 two-year colleges, 71 baccalaureate colleges, and 165 universities). Percentage agrees for each measure. From Campus Trends, 1986, by E. El-Khawas, p. 16. 1986, August. Washington, D.C.: American Council on Education. Reprinted by permission.

Faculty Issues

Assessment of institutions and students focuses attention on faculty and in particular on their roles as instructors. While some trends point to faculty development issues--tenure, retraining, workload--many are related to issues in the assessment area. Among these are part-time faculty, evaluation and faculty freedoms, and faculty role in governance. The first paragraphs of this section review these latter issues, while the last paragraphs return to faculty development issues.

Part-time Faculty, Governance

The argument for employment of part-time faculty has two main sides. On one side, there is a strong argument for the effective use of talent, particularly real-world talent, faculty who are practitioners, and the use of these faculty on a part-time basis. Practitioners in many fields are unwilling to take the dramatic cuts in salary required to leave business and industry and come to academe. Others lack the necessary academic credentials but have far more vast knowledge than any amount of graduate training can provide. These situations enable universities to utilize experts for smaller investments than would be needed to bring them into the system on a full-time basis. Since over 80% of an institutional budget is used for faculty and other personnel salaries, the salaries needed to attract experts would not be available under conventional funding systems (Gappa, 1984).

It is estimated that universities now employ one out of every three faculty on a part-time basis (NCES, 1984 in U.S. Bureau of the Census, Statistical Abstract: 1986). Although some of these faculty have selected part-time status as a retirement or preferred situation, there is mounting evidence that universities are able to use part-time faculty to their own ends without much concern for long term development or commitment. Some part-time faculty see their status as a waiting line function, feeling that they will receive a full-time slot when one becomes available. Regardless of the reason for their utilization, the number of part-timers has a significant impact on institutions. The following table illustrates the proportion of part-time faculty utilized.

Table 4

Number and Proportion of Part-Time and Full-Time Faculty, Real and Estimated

	Total		Faculty-- Instructor or Above				Faculty Including Junior Instructors			
	# (000)	% Increase from 1970	Full-time (000)	%	Part-time (000)	%	Full-time (000)	%	Part-time (000)	%
1960	276	--	154	65	82	35	162	59	114	41
1970	573	--	369	78	104	22	383	67	191	33
1976	793	38	434	69	199	31	462	58	331	42
1980[a]	846	48	466	69	212	31	496	59	350	41
1985 Projection[b]	824	44	453	68	210	32	481	58	343	42
1990 Projection[b]	799	39	441	68	204	32	468	59	331	41

[a] Estimated data

[b] Intermediate alternative

Source: Part-time Faculty: Higher Education at a Crossroads by J. M. Gappa, 1984, p. 14. Washington, DC: Association for the Study of Higher Education.

A related problem is the institutional emphasis on the role of part-time faculty in the quality of the instruction. The amount and kind of input from part-time faculty in the instructional program and the subsequent evaluation of their results has come under much attention, without a consistent conclusion.

The second reason for utilizing part-time faculty is more often the case and the cause of the concern: part-timers cost the university a great deal less than full-time faculty, and their employment causes relatively few problems in long-term planning. Since institutional budgets will in all probability continue to be stringent, and enrollments will fluctuate (Leslie, Kellams, & Gunn 1982), the use of part-time faculty is highly likely to become an even more prominent feature of higher education.

The exact dimensions of the problems associated with part-time faculty are framed by many caveats. Determining the workload of part-timers is difficult because there is no consistent delineation between part- and full-time status. One estimate puts the number of part-timers at 206,000; the same study numbers full-timers at 441,000 (NCES, 1982 in U.S. Bureau of the Census, Statistical Abstract: 1986). This study and others also show that the number of part-timers is increasing while full-timers are decreasing.

By no calculation do part-timers perform half the teaching, as their numbers might indicate. Again, the actual load carried by part-timers is difficult to determine, but one estimate puts the load at about 15% (Gappa, 1984). It is not presumptive to assume that they do not have a proportionate say in instructional and programs matters.

Both full- and part-time faculty are concerned over how much say part-timers should have in the content of their courses and in the overall curriculum. This tension adds to the feelings of isolation felt by part-time faculty members (Townsend, 1986). If indeed part-timers are expert practitioners, then the argument holds that they have much to offer and should have a large say. On the other hand, they are often not experienced with incorporation of pragmatic issues into theoretical frameworks nor at putting contemporary action into historical perspective. This limits their ability to design and evaluate curricula.

In addition to concern over academic and instructional matters, there is concern over the extent of influence of the part-timer in governance of the institutions, their numbers on committees, and so forth. Even if some institutional ratio for representation can be established, there still exist the legal questions on the part-time faculty role in terms of collective bargaining and their rights to contract procedures granted to full-timers under the property laws (Gappa, 1984). Additionally, there is some evidence that evaluation of part-timers is conducted in dramatically different ways from that of full-time faculty members, perhaps because often the student evaluation is the only factor used.

The procedural issues do not stop at the contract level but have influence at levels that affect institutional viability. For example, the number of faculty slots allotted to an institution, and to a department, is usually calculated on student demand. These demands fluctuate. Even when enrollments are increased sufficiently and consistently so that new faculty slots can be requested, the time-lapse between request and the filling of the slot is too great to meet demand (Leslie et al., 1982). On the system level, the number of part-time faculty is restricted in some states, and in states such as California the salaries of part-timers and full-timers are set legislatively at differing levels. Finally, funding, in many states, has a link to the ratio of full- to part-time faculties. This ratio is of interest to the accreditation review process (Gappa, 1984).

In summary, part-time faculty are employed by institutions for a number of reasons. For some faculty it is a matter of choice; for others it is a necessary holding pattern for future employment. The number of part-timers will assuredly increase unless some dramatic restructuring of position allocation is developed. Regardless, there will always be part-time faculty who will bring to institutions certain legal and ethical problems, problems that will continue to influence institutional policies and precedures.

Evaluation and Academic Freedom

The development of the tenure system and the tradition of academic freedom, originally seen as faculty's sole protection against punishment for the exercise of the inquiring mind, have largely been replaced by developments in due process and common law (Olswang & Lee, 1984). However, increased fiscal stress and the call for greater accountability are seen by many as possible constraints resulting in post-tenure evaluation (Licata, 1986) and, in some interpretations, constraints on academic freedom (Olswang & Lee, 1984).

Part of the problem tailgates on the trends nationally, and in higher education in particular, for increased accountability. Faculty are not at such liberty as they once were to develop projects and conduct research. Many funding agencies, state and federal, want more efficient and effective use of their dollars than certain types of research can guarantee. And some political considerations are seen as interfering with faculty choice in research.

The conflict in goals of institutions and those of the freedom of the independent scholar will only become more complicated during the late 1980s and early 1990s. Many researchers and observers of this situation are concerned that without planning, the conflicts may be handled in ways that will lower morale and heighten hostility among the "estates," making institutions less functional as they respond to internal and external stresses (Olswang & Lee, 1984).

As faculty have traditionally expected freedom in research, they have also regarded themselves as gatekeepers of the profession. They have operated on the extended guild model even to this day, training, certifying, and hiring their members (Grace, 1984). It is the faculty who have set the criteria for promotion and tenure and who utilize peer review in judgment of a member's achievement as a teacher and researcher. Now the increased interest from the state and other outsiders in faculty welfare and productivity has increased the dimensions of the issue of faculty evaluation and accountability. Among the more complicated of the areas are faculty workload (Yuker, 1984) and post-tenure review (Licata, 1986).

The existing fiscal stress suffered by most institutions has caused re-examination of faculty workloads. With enrollments and funding power turning downward, faculty employment is shifting to the buyer's market. "Given decreased mobility and rewards, it is likely that those faculty [already tenured] will remain in education at their institutions for another 20 to 30 years" (Brookes & German, 1983, p. 34). Student demand for certain programs has diminished, and faculty are frequently asked, or required, to cover wider areas, some of these requiring retraining. While the courts have generally affirmed an institution's authority to require faculty to perform assigned tasks internally, lack of say in determining workload is thought by many to compromise faculty freedom. Regardless, with the shift to institutional prerogatives over faculty choice, morale is likely to be extremely low (Olswang & Lee, 1984).

It has long been argued that tenure works against excellence in teaching and research. While probationary faculty undergo mandated periodic review, there are few institutions where evaluation of tenured faculty's adherence to the standards required to receive tenure is conducted (Chait & Ford, 1983). While the issue of who is to do this post-tenure review is in itself controversial, its current link with retrenchment presents a situation with little procedural or legal precedent. Other professionals are finding that our litigation-hungry society is intruding upon traditional professional disciplinary practices. Periodic review of all faculty by their peers would probably be an acceptable compromise between the increasing decline in the awarding of tenure and the intrusion of the external reviewer (Bennett & Chater, 1984). It is yet to be seen if faculty will be able to continue to be their own and sole sentinels.

Management and Planning

Administrators and faculty in institutions of higher education are experiencing increasing stress from both internal and external sources. The nature of the student body, so vastly different from that with which most have had experience, has provided the opportunity and indeed the necessity for these leaders to reassess mission and role as well as instructional and learning environments. Faculty issues are more difficult to resolve within traditional procedures. Increased demand for accountability from the state and federal government and decreased fiscal resources have also brought forth examination of traditional means and measures of efficiency and effectiveness. When the faculty and administrators are not preoccupied with enhancing student learning and development, they must turn their attention to the vertical struggles with the state and federal agencies that have become a part of everyday management, planning, and decision-making at colleges and universities (Mortimer, 1978).

Evaluation of Mission

It is of use to remind ourselves that the conflicts over mission and role exist not only among institutions within states but among the levels of the hierarchy of higher education: the research university, the comprehensive institution, and the two-year college all do some of each other's work. In most cases, gentlemen's agreements and state board actions can accommodate the parameters of the debates. As competition for students increases, there is little indication that institutions will not continue to step into each other's territories.

Accountability

In recent studies of blue-ribbon commissions, which are state-level devices for examining higher education, the researchers found that issues of mission occupied a notable portion of commission recommendations across the states (DiBiasio, 1986; Grace, 1986; Johnson & Marcus, 1986). It is the states' perceptions then that institutions have failed to define and carry out their legislative missions. The states' interest comes at a time of increased external scrutiny, when the states are demanding of institutions more efficient use of resources given them.

Additionally, states have increased their demand for measures of this efficiency. Not only is there increasing interest in how funds are used, but there is also increased inquiry into how institutions define the excellence of the product they produce. In addition to the concern for how faculty spend their time, as discussed earlier, much attention is being focused on student competency and student development (Garland, 1985; Whitman, Spendlove, & Clark, 1984).

Several states are now requiring or at least experimenting with competence testing, be it "rising junior" exams or demonstrated writing proficiency before graduation can occur. These intrusions are the state's extension of its role in commerce and certain public welfare roles where entering professionals are required to pass licensing examinations before undertaking the practice of that profession in the state. There is increasing emphasis on competency at graduation, competency that reflects intellectual development that can be measured by some standard.

For a long time, administrators have measured institutional effectiveness by student outcomes measures: job placement rates, retention and graduation rates, alumni ratings, and long-term outcomes of students (El-Khawas, 1986). The numerous quality rankings of institutions, all but a few focusing only on prestigious research universities, use faculty research productivity as an almost sole criteria for measuring excellence (Conrad & Wilson, 1985; Webster, 1981). Other measures are used by various other agencies and associations, but most variables describe outcomes measures. There is a movement to address process as a measure, but it has yet to gain popularity or understanding with either outsiders or the academic community (Astin, 1985). It is logical, then, to see that although states are searching for effective measures of institutional productivity, there is some difficulty in identifying measures. This problem has gained much attention of late. It is yet to be resolved whether institutions will be able to devise sufficient evaluation programs that will demonstrate to state and other funding agencies that productivity is high and quality is being obtained through effective use of resources.

These increased demands for accountability and excellence have emphasized the need for institutions to engage more seriously in planning. The need for creative fiscal planning and management has always been a high priority but now appears to have changed its focus: many institutions find they are no longer concerned with increasing their budgets, but are simply trying to retain the previous funding level. In a recent ACE survey, 12% of the public institutions surveyed reported a decrease in their overall budget (El-Khawas, 1986). This trend when considered with decreased federal support, especially student financial aid, and increased costs of instruction and research has set the agendas of administrative calendars for some time to come.

New Students, New Faculty

The changing nature of the student body has also brought pressure on the planning of institutions. Nontraditional students taking new programs using nontraditional schedules have caused institutions to restructure whole programs to meet the demand. While the demand is immediate, the ability of institutions to respond quickly is hampered by traditional processes and policies. Many changes in curriculum and instructional materials, for example, cannot be made without higher level approval, a process requiring far too much time for a service organization.

New faculty should be hired to teach the new students in the new programs. In fact, there are few new faculty slots available in most institutions. The faculty continue to gray at a rate that alarms both retirement planners and faculty chairs (Brookes & German, 1983). Institutions seek creative ways to staff popular programs that have not been officially blessed with increased resources. The use of part-timers may solve immediate needs, and utilizing contractual faculty may delay decisions to restructure faculty tenure systems, but personnel problems may develop. A faculty may be split philosophically by differing legal and traditional workload evaluation criteria. Yet, the use of part-time and contractual faculty seems inevitable as a response to fluctuating fiscal support and changing demographics. Of all institutions, 80% report using contractual arrangements for faculty currently (El-Khawas, 1986). These faculty usually have very different expectations of continuation of employment than do tenured faculty. Administrators have become personnel experts in staffing the faculty.

Infrastructures

One of the most neglected areas of responsibility for administrators is the physical plant that houses the learning academy. Deferred maintenance and capital construction continue to rank very low in budget monies allocated by states. It is the safety and instructional standards that concern administrators for the most part, but it is the esthetics that bother the development director who must answer to disappointed graduates and prospective students.

In Crumbling Academe (1984), Harvey Kaiser estimates that capital facilities would require a $78.6 billion dollar investment by colleges and universities just to bring them up to current construction standards; the average cost for a research university would be $70.4 million. This valuable investment of dollars in higher education is generally ignored by governing boards and state legislatures. Procedures for dealing with capital matters are often complicated and archaic. Most states still require university requests for construction to be reviewed in the same matter as the requests for prisons and parks, a system which does not support response to changing technology and student demand. Meanwhile, accreditation and high-technology programs are threatened by institutions' inability to guarantee appropriate physical facilities.

Support

Outside challenges also concern administrators. The slowing economy means less employment for graduates and less money for research and from donors. Relationships with federal and state agencies are not viewed as positively as they were at one time (El-Khawas, 1986). Efforts to reduce the federal budget are seen as threatening to student financial aid and to developing institutions. Increased accountability and diminished resources have made the state-institution relationship less mutual.

Administrators have had to develop creative approaches to financing the efforts of their institutions, activities costly in time and resources. In the meantime, traditional demands remain. Accreditation visits fill administrators' calendars. The need to be active in the political arena occupies much of the time that is left. Faculty, staff, and students demand more attention and time in the decision-making arena. The struggles among the horizontal estates distract from the vertical contests. Administrators find it difficult to have enough time to decide on the priorities for their institutions.

Leadership

Administrators face critical management and planning tasks in the future. The traditional route to administration through the faculty discipline will be less likely than the formal training in management, especially business. Entrepreneurial skills will be among those most sought, and successful administrators will be able to wear many hats (Cope, 1981).

Much has been written on leadership and its use in organizations and in higher education. Certainly, the role has taken on dimensions never imagined at the University at Bologna. The trend of skepticism toward institutions of higher education and the intrusion into the ivory tower have challenged the skills of even the greatest of academic leaders. Presidents have shorter and shorter tenures in office (Trow, 1985). Academic administrative positions go not necessarily to disciplined faculty but to persons trained in business organization theory and higher education administration (Fife, 1986).

Demonstration to benefactors and believers that institutions of higher education continue to be both servant to and leader in society will no longer be a luxury but a survival skill.

Program Characteristics

The national-level calls for quality have focused particular attention on what programs and courses students are taking in college. Many of the recommendations from the national-level study groups have suggested reform of the curriculum, returning to an emphasis on a core curriculum which has as its basis the liberal arts. Changes in student demand and in the technology of instruction have made a return difficult at best.

Student Demand

Students are attending college with an eye to attaining occupational skills. They take those programs which tend to guarantee higher paying jobs: business, computer science, the techs, and pre-professional curricula like law and medicine. In 1977, Astin reported that careers in business, homemaking, and college teaching showed the most gains in student undergraduate choices. Loss was substantial for careers in engineering, school teaching, and medical and scientific research. In 1983, computer science and business showed increases while education and the social sciences showed decreases in number of degrees granted (NCES, 1986, in U.S. Bureau of the Census, Statistical Abstract: 1986). The curricula with the less proportion of liberal arts are more popular with students.

Although the nature of the general education requirement of curricula is still widely discussed, there is less interest in increasing program requirements (El-Khawas, 1986). However, almost 60% of institutions surveyed by ACE report that they are considering changes in their academic programs.

The disparity between student demand and the direction of curricula reform will no doubt strengthen a long-term trend of student demand for relevance.

Technology of Instruction

Educational delivery systems will be affected in numerous ways over the next decade. Some changes are trend-related; some are part of the evolving technology of instruction.

The changing nature of the student body will cause shifts in delivery of educational material. The trend toward part-time attendance will cause institutions to expand the instructional day either by scheduling more programs in the evening and on weekends or by providing self-paced instruction for parts of programs (Johnson, 1984). There are implications for management, staffing, and quality control when the traditional instructional block is altered.

The new and expanding technology will provide alternative methods of instruction. TV, radio, and newspaper courses have been utilized for some time. Now links by home telephone with lectures and computers can enable a student to participate in the information exchange on entirely different levels than before. Additionally, more students are entering college with sophisticated computer skills, causing curricula to be updated and advanced and instructional methods radicalized. The implications for fiscal support of Computer Assisted Instruction (CAI) and for faculty retraining are great (Weathersby & Tarrele, 1980).

While institutions are not generally structured legally or pragmatically to respond quickly to these changes, private and corporate education programs are (Johnson, 1984). They have no long and involved procedures for ordering computers on bid nor any faculty committees to approve updated course content. Their response time can bring programs closer to the cutting edge and to student demand. In addition, business and industry have opted for home-grown education for their employees (Morse, 1984).

One study estimates the amount of effort toward employee training and education to have been in excess of $30 billion in 1980 (Morse, 1984). This figure is half of what is spent in traditional higher education in the same year. While certain training must remain on-the-job, there is an obvious market for much of the training and education of American workers. That business and industry have chosen to seek this training in other than traditional situations or have created their own colleges is not an endorsement of American higher education.

Much of this seemingly specialized educational experience is pragmatic and therefore restrained by traditional theory and general education prerequisites. But a significant number of older learners, and high school youth who are without job skills, see corporate education and that provided by proprietary schools as meeting some very real needs. This meeting of student expectations and needs will no doubt continue to help expand the share of the higher education market taken by these nontraditional systems. Administrators of colleges and universities are reconsidering whether they wish to market their institutions toward this mission. If not, the trend toward corporate college and proprietary school education will continue.

Conclusion

Many trends must be considered when planning for the future for higher education in the next decade. There is general agreement that the college, the student, and the curriculum as we have known them are changing. It is hoped that the change is evolutionary, that no revolution will be necessary. Evolutionary change means that we will be able to use the new technologies to enhance instruction, to provide students with occupational and liberal arts skills, and to staff our institutions with the best faculty. Also we must develop better methods of assessment of what we do in institutions of higher education, in order to manage and plan for the future of institutions and society as well as we have in the past. Riding on the crest of the tidal wave may be stressful, but only from up there can we get the proper perspective on what needs to be done in higher education in the 1980s and 1990s.

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EDUCATION AND INFORMATION TECHNOLOGY: WHAT ARE THE QUESTIONS?

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One of the most interesting buttons being worn at a recent education convention read: "TECHNOLOGY IS THE ANSWER! But What Was the Question?" There is more than momentary humor in that catchy phrase; it could well be the slogan for the various movements which have brought their technologies to education. These "solutions" were seeking linkages with problems that would make the technology of the moment the beachhead of a new movement.

Thomas Edison said in 1922, "I believe that the motion picture is destined to revolutionize our educational system and that in a few years it will supplant largely, if not entirely, the use of textbooks." He followed in the tradition of the mid-fifteenth century professors who bemoaned the invention of printing because it would do away with the need for lectures. Post-World War II pronouncements of panaceas were hastened by rapidly developing inventions such as television, programmed instruction, and computers. The prophets do not cease nor do they reduce their endless quest for the machine or technique that will bring about the next revolution in education. They are among us today.

The latest prophets are the microcomputer advocates who demonstrate some of the same characteristics as their earlier colleagues who believed that one medium or another was about to revolutionize education. They feel that they have discovered a device or medium that will engage learners as no teacher has ever done before; they see potential for optimum learning by creating replicable instructional packages that can be used throughout the nation; and they feel that the use of microcomputers is consistent with the American psyche, which embraces new technologies as new religions. There is nothing "wrong" about these perceptions; they are simply naive in light of the history of innovations in schools.

Some of the same patterns were evident when educational radio, silent and sound motion pictures, slides and filmstrips, overhead projectors, language laboratories, and programmed instruction were introduced to the education establishment. These technologies were diffused and installed. Teachers than adapted them to fit their individual styles. In most cases they have become an additive or enrichment resource. Seldom have they achieved the status of an integral component in a curriculum or learning system in the schools. Now microcomputers have come along and teachers are once again faced with decisions about how to incorporate this new technology in their instruction. If they are confronted with the same limitations that they faced in previous similar situations, they will find that they have insufficient skills, little time, and limited resources. They also will be responsible for classes of 25 to 35 learners, probably the single most significant deterrent to innovation in the American classroom.

Holloway (1984) advances some propositions regarding factors which affect the use of technology in education.

- o Technical artifacts do not originate in education nor are they intended for teaching or learning.
- o Initial uses of technical devices are designed for the general consumer market industry, government, or the military.
- o The use of technical devices in education is determined by sales in other sectors--and sales are slower in education than in other sectors.
- o Technical devices must be adapted for education; they cannot simply be adopted. (p. 40)

Technology in education has evolved from audiovisual media to "new information technology [which] is founded upon recent development in three fields: computers, microelectronics, and telecommunications" (Hawkridge, 1983, p. 330). The primary significance of technology, however, lies not in the equipment, but in how it is used.

A Matter of Definition

The word "technology," then, is confusing since it may mean social technique, a procedure for task analysis, any applied science, a rigid procedure, or equipment and related artifacts. Each view has a set of perceptions and expectations. Each has important messages. If we use the word "technology" as a shorthand reference, we must be clear which definition and concerns are referenced or discourse will simply turn to disagreement" (Holloway, 1984, p. 3).

The potential for misunderstanding technology in education stems from the obvious manifestations of its presence--the equipment.

The confusion over definition is an issue of long standing. It is basically a conflict between product (hardware) and process (software). In its best usage, the definition is a blend of the two which has been cogently stated by the Presidential Commission on Instructional Technology (Tickton, 1970): "[Instructional technology] is a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, based on research in human learning and communication and employing a combination of human and nonhuman resources to bring about more effective instruction" (p. 21). It is in this vein that the term is used in this chapter.

"What Was the Question?"

The "question" should have addressed the way in which learning could be improved by helping each individual to become increasingly responsible for his/her own learning. Instead, most of the research focused on comparisons between "traditional" teaching and teaching performed by medium x, medium y or medium z. Te results were uniform: no significant difference. Schramm's summary of research (1977) is often quoted: "A teacher can feel a great deal of confidence that motivated students will learn from any medium if it is competently used and adapted to their needs" (p. 267). This analysis leads to the conclusion that it is the systematic design and use of hardware and software which determines the effectiveness, efficiency and quality of instruction and learning. Clark (1983) states the conclusion:

> Five decades of research suggest that there are no learning benefits to be gained from employing different media in instruction, regardless of their obviously attractive features or advertised superiority....The best current evidence is that media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition. (pp. 445, 450)

The Issues, Then

Although there are myriad questions which need to be explored regarding the role and use of technology in education, it is the issues that will be analyzed in this chapter. The previous discussion provides a context for the analyses which follow.

- There is an acceptance of technology by our society but a reluctance to use it as an integral part of the teaching and learning process.
- In education, as in society, technology has a potential for helping to create excellence as well as mediocrity.
- Education/information technology is a likely vehicle for teaching problem-solving.
- Software abounds but quality is scarce.

These issues, all interrelated, will be discussed one by one.

Societal Acceptance; Educational Reluctance

This era has been called the information age. No wonder. In the western world we have access to more information than at any time in history. The daily newspaper (and sometimes two or three) is augmented by journals and magazines of every description. Radio is ubiquitous--in the car, in the shower, and as we walk. Television comes to the home by satellite, multiple channels of cable, and by ordinary transmitters. And if that is insufficient there is always the videotape recorder with its endless library of videocassettes. Once the information seeker leaves home, there are the library, the museum, and the night school. Once in the library, there is access to 2,590 databases (Williams, 1985), each with its own specialization. This wealth of information has been referred to as an "explosion," a "flood," and an "overload." Yet it continues to grow.

The computer has become the instrument and symbol of the information age. It too is becoming ubiquitous and is directly responsible for producing more information in more places than any instrument since the printing press. The computer has been widely adopted by business, industry, medicine, the military, government, and other sectors of society, without much resistance. Its capacity for handling, storing, and retrieving information in a timely and useful manner have made a place for this amazing tool. When combined with telecommunication systems, the computer is extended to other locations and has developed expanded utility. The computer has entered the home and even the schools.

In what seems to be a relatively short time period, the microcomputer has found its way into over 90% of the public schools in the United States (Hood, 1985; Quality Education Data, 1985). With an average of eight microcomputers per school building, there is a "micro-intensity" (school enrollment divided by microcomputers available for instruction) of one microcomputer for every 63.5 students (Hood, 1985, p. 30). The numbers tell us that there are more than half a million microcomputers in the elementary and secondary classrooms of the United States. We do not know how they are used; by whom they are used; for how long; and with what results. But they are there and are presumably being used in some fashion.

It is natural to turn to research sources to see if usage information can be found. A review of two decades of research on computer based instruction (CBI) by Hasselbring (1984) concluded that

> There is evidence that computers can be used to effect positive student gains in all curricular areas, but especially in math. It also seems that CBI is especially powerful for disadvantaged and students with learning difficulties....The greatest gains from the use of the computer seem to occur when it is integrated thoughtfully into the on-going curriculum and not used as a replacement for existing courses. (p. 15)

Naron and Estes (1985) confirm Hasselbring's conclusion in an in-depth study of 25 educational institutions in which trends and policies regarding technology in the schools were identified. Rogers and his associates at the Institute for Communication Research at Stanford University (1985) used a case study approach to investigate the process of adopting microcomputers and incorporating their use in the curricula of nine high schools in the San Francisco Bay area. Some of the findings were surprising in that schools in this area are normally considered to be in the vanguard of new technology:

1. About half the schools studied acquired educational mini-computers and microcomputers largely due to external pressure from gifting corporations, parents, or students, not because educators decided that the new machines represented a better way to present instruction.

2. The usual level of school planning is insufficient to adapt microcomputers to the curriculum.

4. The educational microcomputer is still a "fragile" innovation, but it is probably not a fad that will pass from the school scene in a decade or two.

7. Given the rapid evolution of microcomputers and courseware, and the explosion of teaching applications--literally from arithmetic to zoology--instructional use of the computer has yet to become routine in the high schools studied. Nor are applications likely to stabilize for several more years. (pp. v-vii)

It is likely that Rogers' findings would be generalizable to other school settings. We are left with the paradox of a society in which the information level outside the classroom is much higher than inside; where technology has become a way of life in commerce, government, health care, and the military, but not in the schools. When it does find its way into education settings, technology is additive and not integrative, an artifact of our times trying to find a place for itself in an established institution that has been noted for its resistance to innovation.

These realities have been acknowledged by a National Task Force on Educational Technology established by the United States Department of Education (Ridley, 1986). The Task Force report calls for a transformation of American education through deliberate and appropriate applications of technology to the teaching and learning process. It sees five major uses for technology in education:

- To develop basic knowledge and skills more efficiently than is possible with conventional instruction.
- To teach higher order concepts and reasoning skills that are more difficult to develop without the technology.
- To develop an understanding of information technology and its uses in society and the workplace.
- To develop proficiency in applying computers and related technologies.
- To enable teachers to manage a mastery learning environment in which learning is tailored to fit each student's needs. (p. 61)

The Task Force's recommendations would help to bring about these goals through planning for mastery learning that would allow students to progress independently according to their own abilities; financing of computer-based education as a central and continuing aspect of the school budget; teacher education which would prepare teachers to use technology in an optimum fashion for teaching and management; curriculum and instructional practices which are based on active and interactive learning at a rate which is appropriate for each student; and research, development, evaluation, and dissemination which include studies in cognitive science, artificial intelligence, learning theory, and classroom applications of improved software based on the research (Ridley, 1986). These recommendations, if implemented, would go a long way toward correcting some of the mistakes of the past and opening up new opportunities for schools to join the information society.

Technology Has a Potential for Helping to Create Excellence as Well as Mediocrity

The benefits of technology can be readily observed in medicine, transportation, communication, and commerce; likewise questionable consequences can be seen in pollution, delayed traffic on land and in the air, and computer errors. Technology is essentially neutral. It can be a tool to help people become more humane since it will perform mundane and repetitious tasks. Some tasks are performed better by people and some by machines. A technological approach is the interaction of individuals, materials, and machines in a systematic fashion to achieve predetermined ends.

Education is still largely labor intensive. Most concepts of education, in the institutional sense, focus on the teacher and a group of students. The conventional wisdom is that the smaller the group of students, the better the teaaching will be. One on one is considered to be the epitome--a personal tutor. There is very little data to support these premises. A good teacher can be good with one or one hundred students; a poor teacher does not improve with reduced numbers of students.

The ideal of a personal tutor for every student is economically not feasible. But an individualized learning program is possible if technology is a part of the system design. The new concept calls for teachers to be managers of learning rather than dispensers of information. This concept calls for use of a variety of resources geared to each student's needs. It must be systematically organized to let the teacher do what teachers do best--motivate, encourage, respond to difficult questions--and the machines to do what they do best--present information, drill and practice, assist in problem-solving. Teachers are thus freed from basic presentation of instruction and supervision and devote their time to small group activities and individual interaction with students.

Many of the technological trends in education point toward improved efficiencies, effectiveness and, eventually, excellence in learning (Ingle, 1984).

Use of mass media has decreased in favor of personal media in the instructional process. Even though television is available to about 71% of teachers nationwide, only about 30% are regular users, mostly in elementary schools (Riccobono, 1984). The use of instructional television among elementary teachers declined significantly from 42% in 1977 to 33% in 1982-83, while microcomputer use in elementary schools increased from 11% in 1981 to 82% in 1984 (Hood, 1985). It is likely that as size and cost are reduced, individual students will have their own devices for personal use in school and at home.

Use of technology for various administrative and management functions has increased in education. Most schools used technology in the office before the classroom. From the old central sound systems and telephone intercom, the school office graduated to data processing equipment for student records and, most recently, to modern computers for grade reports, test analysis, and budget management. The mission of technology in the school office is clear because its purpose is known; it is less clear in the classroom.

There has been a gradual blurring of the distinctions between media as new technologies are amalgamated with old media to yield new information products and services. An example of the blending is the use of telephones with microcomputers to form electronic networks. Sixteen-millimeter educational films are now available in several videocassette formats and are sometimes shown on cable systems within the school or school district if proper copyright clearances have been arranged. Videocassette recorders make possible more versatile use of the medium than earlier versions which were broadcast on a fixed schedule. These flexibilities permit new perceptions of media use within a technological framework.

Greater simplicity and lower costs of technological products are increasing their availability, use, and affordability for educational practitioners. Availability is an important key to use and affordability makes products available. Most of the research on innovations in education reveals that cost is not a primary deterrent to adoption and implementation of an innovation; leadership and commitment are more important. But cost certainly has to be a factor. Even though need is demonstrated or advocacy is strong, the money has to be found to purchase the equipment and materials. One of the greatest fallacies in reporting educational innovations is that acquisition of the machines is tantamount to comprehensive adoption. It is assumed that all aspects of the innovation will follow. This is simply not true. The acquisition of the product is an outward symbol of innovation and bears little resemblance to how they are being used or what results are being obtained.

There is customized development of locally produced materials designed for specialized instructional requirements for special learners. The passage of Public Law 94-142, the Education for All Handicapped Children Act, requires teachers of handicapped learners to develop Individual Education Programs (IEPs) for each student. This concept of individualized learning has been the ideal of educators for many decades. Now, by public law, it is required and some educators and parents are asking, why not for all learners, not just handicapped individuals? Special education teachers and others who are working with handicapped children have accepted mediated instruction as a necessary and desirable part of the IEPs. When the IEP is considered in its totality, it is an expression of applied technology where people, materials, machines, and methods interact in a systematic fashion to bring about desired outcomes. With computers, microelectronics, and telecommunications, the technology will become more sophisticated and, if properly integrated, lower in cost. There are three basic technological configurations which determine the cost, effectiveness and, eventually, the quality of teaching and learning: additive, integrated, and independent (Wilkinson, 1984).

In the additive approach, materials are added to regular instruction as supplementary or enrichment activities and are not necessary for the achievement of basic instructional outcomes. The use of media is dependent on the classroom teacher, does not have a significant impact on student achievement, and represents an added expense for the educational system.

In the integrated approach, carefully selected or produced materials are integrated into regular instruction and provide an essential element leading to the achievement of basic educational outcomes. This approach represents an additional cost for the school system and requires extensive planning and preparation on the part of the teacher, but has the potential of creating a significant increase in student achievement.

In the independent approach, instruction is redesigned so that basic instructional outcomes are achieved through the active interaction of students and instructional materials without the direct intervention of the classroom teacher. Although this approach represents a major initial cost to the school system, it has the greatest potential for increasing the cost-effectiveness of education.

There is a greater push for technological "literacy" among students, teachers, and administrators. Fourteen states now require some work in computer science and 28 more are considering similar requirements. Educators foresee the need for technological literacy to be able to live and work in an information society but there is no agreement on what constitutes computer or technological literacy. Each state and many school systems are creating their own definitions and syllabi. The ERIC system has many documents and journal references on this topic. Computer literacy for students also gives rise to the question about computer literacy for teachers. Geisert and Futrell (1984) call for knowledge of computers sufficient for the use teachers will make of them. The teacher of computer science or programming obviously needs more technical knowledge than her/his peer whose students will use computers only for drill and practice or other classroom exercises.

There is greater use of educational technology in classrooms and homes by individual teachers and learners. Over 90% of the elementary and secondary schools in the United States have microcomputers (Hood, 1985; Quality Education Data, 1985). Three-fourths of all schools have one or more videotape recorders (Riccobono, 1984). Television monitors are also being used to receive cable signals and, to a lesser extent, satellite signals. The same monitors can be used as display screens for microcomputers. Home use of microcomputers is increasing and the products of technology have become integral parts of almost every household in America, whether rich or poor, urban or rural.

Education/Information Technology is a Likely Vehicle for Teaching Problem-Solving

When technology is considered as a process, it is problem-solving. John Kenneth Galbraith (1967, p. 12) defines technology as "the systematic application of scientific or other organized knowledge to practical tasks." In education, the "practical tasks" are focused on learning and it is the systematic use of technology that can facilitate the attainment of those tasks. The process of stating a problem, analyzing its components, creating alternative solutions, and testing them for the most cost-effective solution is the way technology works in any sector of society. Technology is the tool of problem-solving.

In education, after basic skills are attained, one of the most frequently sought-after goals is the ability to solve problems. Problem-solving is a form of inquiry in which the learner must ask the "right" questions. Formulating these questions is often in itself a difficult task but there is no end to the number of questions that can be asked once the problem is clear. The resources used to answer the questions may give rise to more questions and help to sharpen the focus. Resources include the teacher and other school support personnel such as the school library media specialist. Additional assistance can come from specially designed learning materials and from information databases. It is at this point that the products of technology enter the picture. The National Task Force on Educational Technology sees it this way:

> Alternative learning methods and procedures have begun to emerge that promise many learning options. It is becoming clear that individual learners (and teachers) need no longer to conform to one standard teaching/learning pattern for all. Programs can be custom-designed for each individual learner. When technology, the tool, helps make such learning not only possible but universally achievable, the educational system of the future will be within reach. (Ridley, 1986, p. 60)

Computer technology is especially adaptable to helping learners gain higher order thinking skills. Through the use of artificial intelligence, simulations, and games, the learner develops reasoning abilities. For example, the computer can simulate laboratory experiments in biology and chemistry. Higher order thinking skills are those that learners use to analyze and synthesize information.

The goal is to develop thinking ability, the ability to construct sophisticated associations between ideas. For example, it is fine for students to "learn" individual pieces of information like historical dates, mathematical formulas, or scientific facts. But more important is the ability to associate facts and create a thesis--whether that be an historical argument, a mathematical principle, or a scientific hypothesis (Pogrow, 1985).

There are many programs available and being developed to help learners acquire and practice problem solving skills (Pogrow, 1985, p. 29). The microcomputer is one of the best vehicles for delivering instruction in this area.

The information database, usually accessed by a computer terminal, is a major resource for locating information which will help to answer questions and thus solve problems. Just as a library shelf offers extensive information between the covers of related volumes, so the database provides facts and figures, usually in a defined subject area. Medicine, law, and education have professional databases, while the general public usually seeks information of a more general nature from specialized databases which include information about travel, consumer goods, and current events. It is in the use of these databases that students acquire some of the problem solving skills that they will use in future settings. Again, asking the "right" questions, choosing key words, and combining logical concepts helps to gain information that might lead to the solution of problems. These resources permeate the college and university library and are becoming more popular in public libraries. The next frontier is the school library media center. Some homes are already equipped to do database searching with microcomputers having communications capabilities. The trends are clear, according to Raymond Neff, Assistant Vice Chancellor of Information Systems and Technology at the University of California at Berkeley.

> Libraries are taking on computers to provide a higher level of information service, one that adds information manipulation to other services....Libraries are providing access to computerized databases and are offering new services to users to assist them in customizing the output of database retrieval, regardless of whether data are textual, numerical, or graphical. (Neff, 1986, pp. 8, 9)

With these powerful resources at the doorstep of education, the issue becomes one of how to help teachers and students use them in an optimum fashion.

The Quality of Instructional Software

One of the most common cries for quality is in regard to software for microcomputers. In an interview for a recent publication of the American Association of School Administrators (Neill, 1984), David Moursund, President of the International Council for Computers in Education, indicated that there has been an increase of "good" microcomputer software from 5% to about 25% over the past few years. Earlier, Wighton (1984) reported that "only 10% of the available materials are satisfactory for effective CAI" (p. 449). Despite slight improvement, the problem persists. Attempts to improve software quality are being made in the research and development efforts of instructional designers who are testing models of instruction for learning concepts. Such researchers as Merrill, Reigeluth, and Tennyson have translated knowledge of how learners acquire concepts into rules for designing effective instructional materials. These rules form a set of instructions that have been tested and revised to create a validated model (Gerlach, 1984). Some of the research being conducted at the Educational Technology Center at the Harvard Graduate School of Education is seeking similar goals in the teaching of mathematics and science (Schwartz, Davidson, & Dickenson, 1985).

What is quality software? Quality varies depending on the objectives, the characteristics of learners, and the relationship of the material to the context of learning. Therefore, definitions of quality have to be set locally. Some software reviews are consistently high; some are not. Some developers of software have consistently high scores in published evaluations. Those organizations and programs which receive these high ratings should be reviewed carefully to determine the reasons for their success.

School districts should determine where products are needed and the form they should take. Efforts to evaluate the effectiveness of software should continue and be expanded in cooperation with the software developers.

Research on what "works" should be encouraged with special attention to younger children whose learning patterns are established during the first few years of schooling. Dissemination of research findings through channels that reach teachers should be pursued.

Some of the best information is obtained when software is actually tried out with the learners for whom it is intended. Such validation data goes a long way to improve instructional products and to provide useful data for teachers who are considering specific products. Agencies which are currently evaluating software usually ask for actual use data. Published evaluations from organizations like the Educational Products Information Exchange (EPIE) and MicroSIFT help in the software selection process, but the number of software packages evaluated is only a small fraction of those available on the market. Extension of these services would serve education well.

Final Words

Toffler's "third wave" is lapping on the shores of education. Some of the sands are shifting and the stones are bearing the marks of technology's lapidary wheel. There has been no major reorientation of the beach, but the wind and water of time have left their marks. Evolution will continue unless some cataclysmic event shifts directions and new forms emerge. It is likely that computers, microelectronics, and telecommunications will be that force in education.

The prognosis is for clear skies and a gentle breeze. The products of technology have established beachheads. Supporters abound. Money does not seem to be a major obstacle. The sands are shifting and there are only a few footprints along the new windswept beach. Is permanence ever possible?

We have raised the specter of Santayana's admonition that those who have not learned from history are condemned to repeat it. Technology should not determine educational goals; but it can be used to achieve them. Past forays into media-land have yielded less than spectacular results. Until technology is seen as a tool and a vehicle to achieve educational goals, it will be merely another artifact in the arsenal of instructional resources. Its use must be orchestrated with all the other elements which constitute teaching for the purpose of helping students to reach learning objectives.

From this perspective, technology relates to all fields and disciplines represented in this publication. The issues discussed here are central to many of the issues presented elsewhere. When technology becomes an issue in itself, we should recycle our concerns back to the beginning by asking, "What is it we want to do? Who are the learners? How will we know when we are successful?"

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CONTEMPORARY ISSUES IN COMMUNITY COLLEGES: A SYNOPSIS

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The community colleges are recent arrivals in American education. Although some of them were formed as early as the beginning of the 20th century, in most states they did not become prominent until after World War II. Accordingly, the public view of community colleges is still indistinct. In states such as Florida where the colleges were designed primarily as feeders to the universities, they are seen as viable options for students who wish to take their first two years of college in their home community. In states such as North Carolina, the community colleges are more likely to be viewed as occupational training centers because they were designed originally as technical institutes. And in California and elsewhere, where the community colleges evolved as comprehensive institutions, they have a varied mission combining the first two years of college, occupational preparation, remedial studies for students leaving high school with inadequate academic preparation, community service, and continuing education.

In common with other educational structures, the community colleges (henceforth in this chapter mostly called "colleges") face numerous issues affecting their programs, funding, and service dimensions. Four sets of issues are of particular concern: maintaining access for all students; effecting student flow through the colleges; preserving a comprehensive curriculum; and maintaining an appropriate teaching staff. Within each of these perennial concerns is a set of contemporary problems that will be discussed in this chapter. However, it is important to say at the outset that community colleges differ so much between states that the issues and resolutions will not appear of equal weight to people concerned with the institutions in any one state. The first section of the chapter presents a background of community college development, with subsequent sections dealing with each of the four issues. The chapter concludes with a summary statement indicating the way that the issues are likely to be resolved over the coming years.

Background

Community colleges began early in the century as junior colleges. Those newly formed institutions were small, supported in the main by private agencies, offering a curriculum restricted to high school postgraduate courses, courses paralleling the liberal arts offered in the freshman and sophomore years at universities, and preparation for middle-level occupations. There were 20 junior colleges in operation in 1909 and 170 in 1919. By 1922 there were 207 colleges and they had spread to 37 to of the 48 states. However, their total enrollment was only around 20,000 students. By 1930 there were 450 junior colleges with a total enrollment of around 70,000, found in all but five states. In 1940 there were 610 colleges, averaging about 400 students each. That year was the midpoint for junior college development since by 1980 the total number of colleges had almost exactly doubled. However the enrollments had increased at a much higher rate; the 1,231 colleges enrolled an average of 4,000 students each. These nearly 5 million students represented over one-third of all higher education enrollments. Around 40% of the people beginning college in America were doing so in community colleges.

The governance system had changed as well. Although there were still nearly 200 privately controlled junior colleges in the early 1980s, they had become a distinct minority. The median private college had fewer than 500 students enrolled. The publicly supported junior colleges had evolved into community colleges, a name suggesting not only their ties to their local districts but also their broader curricular involvements. In addition to the collegiate and occupational studies, they had taken on adult education and a variety of activities bringing them into direct service to other community agencies and groups. And they had grown large; 44 of them had more than 15,000 students each. They were governed by locally elected boards of trustees, state boards of regents, state university systems, state state departments of education, and various combinations thereof. In Kentucky and Hawaii, tne community colleges were under the state university; Pennsylvania and South Carolina had both branch campuses of the state university and independently controlled community colleges; California and Illinois had separate community college districts, each managed by a locally elected board of trustees but all coordinated through a state community college board.

The increase in enrollments resulted from several forces. Prime among these was the steady growth in the percentage of the college-age population that participated in post-secondary study; from under 2% in 1900 to 42% in 1980. The community colleges received their share of this increase, and in fact made the increase possible by putting a college within commuting distance of nearly everyone. In addition, the colleges made special efforts to attract students who otherwise would not be in college; older students, part-timers, those who would ordinarily be barred because of low academic ability or finances. The colleges adapted themselves particularly to part-time students who, by 1972, had become a majority of the population enrolled. These students tended also to be older than typical college-age; the median student enrolled in freshman or sophomore level classes was nearly 22 years of age.

Access

The community college grew large by opening its doors to all who wanted to attend. In its pattern of student enrollment it became the nearest thing to an extension of the lower school. The only major difference was that attendance was not compulsory. Students who had completed high school and who were seeking a ready point of easy entry to higher education, those who had done poorly in high school but who wanted a second chance, students seeking skills that would enable them to enter a new occupation, those who wanted to learn new skills and upgrade themselves in an occupation they already had, adults wanting cultural enrichment or avocational or recreational activities, these and more swelled the roll books. Few were turned away. A course in which they might enroll could always be found, and the colleges made certain that the courses were offered at times and places best suited to the enrollees.

Relatively few of the matriculants sought degrees. During the 1970s the colleges awarded associate degrees and occupational certificates to only around nine percent of their total student enrollment. Those who deplore these figures often point with alarm to the apparently high dropout rate without realizing that at least half the students dropped in with no intention of completing a program. They wanted but one or a few courses for their own benefit. The fact that the courses they took were listed as credit courses leading to a degree was of little concern to the students who were using the institution as a ready resource. Institutional policies were permissive and forgiving, typically allowing the students to take classes with little regard for their progress toward completing a degree program.

But state-level policy-makers took note. Using criteria similar to those employed in assessing the lower schools and the universities, they questioned the ratio of degree attainment to credit course enrollment. More directly, they suggested that there should be limits on the number of courses that a person might take and for which the state would be expected to foot the bill. The universities had dealt with the problem of serving students who were not degree bound by erecting extension divisions and putting them on a self-supporting basis. But the community colleges had not so separated their student groups.

Responding to issues of student progress toward completing degrees, the community colleges in several states adopted policies requiring students to matriculate in a degree or certificate program. Typical of these policies were the ones brought forth in several community colleges in Florida where an entering student would be allowed to take not more than four courses and then would be required to take a placement test and enter a degree track. Restrictions were also placed on the length of time that a student might stay enrolled without making steady progress toward completing a degree. Within the first three years of acting under such policies, Miami-Dade Community College purged its roll books of 13,000 students' names (McCabe, 1983).

During the 1980s the issues of the limitations of service remain open. First among these issues is the question of when the public's obligation to an individual stops. Can a student continue taking courses indefinitely without making progress toward completing a program and while the state continues to pay for that person's studies? Superficially the question seems to have a ready answer, but what of the people who need job retraining successively throughout their lifetime? Much depends on the priorities as determined by institutional policy. Does the community college have a greater obligation to the young person just out of high school, the unemployed adult, or the taxpaying citizens who want classes for their personal interest? Any institution has limits to its resources. The policy of having states pay full tariff only for students enrolled in transfer-credit and occupational education classes is well established but it does not answer all the questions because student intent does not necessarily match the curriculum designations.

The community colleges have been prime among institutions in matriculating students of lesser ability. Historically all colleges have had to be concerned with students not as well prepared as the professors would have hoped. But the early-century expansion of a secondary school system focused on preparing people for college entrance had mitigated the problem. Beginning in the mid 1960s the level of student preparation declined. Because the community colleges maintained policies of open access they took larger proportions of poorly prepared students than did other higher education institutions. As example, 40% of the students entering all institutions as freshmen in 1984 were in the top one-fifth of their high school class and 20% of them had an A average; comparable figures for two-year colleges were 25% in the top one-fifth of their class and 10% with an A average. Composite scores on the American College Testing Program measures showed two-year college freshmen declining from 18.0 in 1964 to 15.8 in 1979.

When faced with students of weaker academic abilities, colleges have several choices; allow all to enter any program and fail them or give them no grade when they cannot perform; set up strict admissions standards and turn away those who cannot meet them; allow all to enter but maintain selectivity in certain courses and programs within the institution; or allow all to enter and provide as much supplemental instructional help as the students need to complete their courses satisfactorily. The first of these options, allowing all to enter and then failing those who could not progress, was popular during the 1960s and early 1970s when students challenged the institution's authority to prescribe programs. Barring the students at entry has never been popular among community colleges since it runs counter to their philosophy; hardly any of the colleges were requiring students to present minimum high school grade point averages or entrance test scores during the 1970s. Allowing all students to enter but restricting admission to certain programs has long been popular; the allied health and high level technologies, for example, have been selective and in most colleges, especially prior to the 1960s, internal selection measures were applied to those who would enter the freshman and sophomore level classes. The fourth option, supplemental instruction, has been tried with a fair amount of success but, because it is the most expensive of college resources, it has never enjoyed more than limited application.

Overriding all the options is the question of limits. Should the community colleges allow students who are reading at a third-grade level to matriculate? The cost of educating the functionally illiterate is exceedingly high and chances of bringing members of that group to the ability to do college-level work are minimal. However, an institution with the charge to serve its entire community finds it difficult to rationalize denying access to anyone. Most institutions have recently begun more vigorous screening measures so that the marginally literate are prohibited from taking classes for college credit and placed in remedial reading, writing, and arithmetic sections. The issue in many states is whether the community colleges should be subsidized for providing that service to people who have already been through the lower schools without learning to read and write, an issue complicated by the illiterate adults who have attended the lower schools years earlier, perhaps in another state. Various compromises have been made, most of them centering on different funding for remedial classes.

Placing students in courses and programs consonant with their abilities and aspirations is a continuing source of concern for educators in all types of institutions but especially for those in community colleges taking pride in their policies of open access. There seems little problem in restricting admission to programs that use expensive laboratories and equipment because people can be readily convinced that there are only so many study stations. Setting prerequisites for certain advanced level collegiate courses similarly is readily rationalized. The problem arises when students seeking college-level studies find that they have been shunted to remedial classes on the assumption that they cannot satisfactorily complete college introductory courses. Because the institutions for many years allowed nearly all students to enter the introductory classes, the instructors developed a tendency of requiring less reading and writing and students passed pro forma. But by the early 1980s they seemed to have reached an irreducible minimum in expectations and the clamor for placing students in remedial classes coming from within the colleges matched that which had been set up by the state officials who were questioning the costs of repeated failure (Farland, 1985).

Students and their families tend to complain little if restrictions on admission are based on clearly defined, uniformly applied criteria and are not discriminatory on politically sensitive bases. Intellective ability as a criterion has certainly been popular except when it appears to discriminate against certain groups. Age as a barrier has never been popular. Family income has not been applied as a screen because the community colleges are relatively low-cost institutions. The ability to read the texts, understand the language, and write the papers remains the most widely applied screening measure.

Testing

An issue in the screening and placement of students involves the tests that shall be employed. Any measure must be relative because it is designed to select some students for entry while keeping others out. Yet all tests that are used must tread a careful line so that they do not discriminate on the basis of certain characteristics that might be irrelevant to the student's ability to achieve in the courses. And since the courses have shifting criteria for success, the search for the proper test is an endless quest.

In order to placate those who argue that published tests are culturally biased, some colleges have opted for teacher-made measures. This tends to satisfy the instructors and it tends also to increase test validity since the same people who have prepared and administered the selection devices prepare and administer the classroom tests. However, although published tests have lower correlations with grades awarded by instructors, they tend also to be popular because they have the advantage of having been validated for the concepts they are measuring and because they are more reliable.

Shall testing at entry be made mandatory with the results of the test used for placement in certain classes? Shall testing be voluntary and the results used only to advise students regarding matriculation? Shall testing be applied only to English and mathematics skills? Although the trend is in the direction of mandatory testing and mandatory placement, the variability among states is notable: In 1982, only 20% of California's colleges were requiring their students to take entrance tests (Rounds & Andersen, 1984) whereas in New Jersey, all college entrants took proficiency examinations (Morante, 1982).

Student Flow

Education is time-bound. Courses and curriculums are built on the assumption that a student enters at one level of learning and progresses to another within some period of time. Ideally, students would find their own path, but one of the schools' major functions is to structure the students' environment in a manner such that learning is effected. Time is a factor.

The community colleges are built on the principle of open access but open access can be maintained only as long as some number of the students completes the programs within some reasonable time. When that number falls below a certain level, questions of institutional utility are raised. What is that level? Program completion in the universities ranges from around 25% completing a baccalaureate degree within five years of entry to around 80% with the difference depending on institutional selectivity, cost, and residential character. Around 10 to 30% of community college students complete an associate degree or receive an occupational certificate within three and one-half years of entry. Clearly the community colleges are less linear, less time-bound.

Community college leaders justify the relatively low completion rates by arguing that they welcome students who take only what they want when they want, students who already have degrees or for whom a degree has little value. These institutions are less selective and less costly than the universities. Few community colleges have residence halls. Five of eight students attend part-time, hence would take longer completing degrees even if all other characteristics were equal. The nature of the community college and its student body have effected a lateral curriculum pattern with students dropping in, taking classes of their choice, and dropping out again. The more recent efforts to select and place students at entry and monitor their progress toward completing degrees have yet to have a marked effect although certainly by the end of the decade the program completion rates will have gone up.

The public has tended to use community colleges as a resource much as they use the parks and libraries. They stop in when they want a class just as they stop in the library when they want a book. No one monitors the parks, asking how many times the person has picnicked or played ball that year; the library puts few restrictions on materials circulation. The problem with this conception of the colleges is that the institution looks like a hybrid of adult school, university extension division, business college or technical institute, and university lower division. This makes it difficult for legislators and the public to understand the institution since it does not fit their image of the way a college should be organized and operated. State-level funding patterns do not fit an institution that has so many disparate elements.

Funding

The issue centers on institutional funding formulas. To the legislators who must appropriate funds for the colleges, no funding pattern fits all functions equally well. Program classifications such as college-credit, occupational, remedial, adult, and community services do not adequately describe the educative activities within those curricula. Nor do they describe the course-taking patterns of students attending. The mature woman with a bachelor's degree, taking an art class at a time of day that is convenient for her is obviously in school for her personal interest. Yet she is counted as a transfer student if the course is offered and funded as a college credit class. Under a policy of charging people full fare for classes that they take for their personal or avocational interest, the institution should not receive state reimbursement for that person's attendance. However, it is difficult to segregate such people for funding purposes.

The line between college credit for transfer to a baccalaureate program and community service is blurred. Students may take college credit photography classes so that they can gain access to the darkroom; auto mechanics courses so that they can learn to repair their own vehicles; secretarial classes to operate new equipment so that they may upgrade themselves within jobs they already hold; foreign language classes for their personal interest in traveling abroad. Which classes deserve reimbursement at the level reserved for baccalaureate credit? Which at the level of occupational credit? Which are distinctly community service courses, deserving to be fully funded by their participants?

Funds are allocated according to four general patterns. In Ohio and Texas, the colleges are reimbursed for courses depending on the cost of instruction. In Illinois distinctions are made among courses depending on their presumed utility as remedial, baccalaureate, technical, and so forth, with health technology courses receiving three times the finds allocated to general studies (Illinois Community College Board, 1985). Arizona and

California reimburse the colleges for students enrolled in credit classes based on an average daily attendance or full-time student equivalent formula. Several other states negotiate college budgets annually (Wattenbarger & Bibby, 1981). No pattern has proved sufficiently persuasive to warrant universal adoption. Each raises issues of equity and institutional priorities regarding categories of students being served.

Related to issues of funding, the colleges face questions of student attainment. We know how many students receive degrees and that figure is low when compared with other types of colleges. But how many gain what they were seeking regardless of whether they complete programs? Studies in which students who have left the institution are polled asking whether they had received anything of value typically yield results favorable to the colleges' policies of open access. Students are exceptionally well pleased with the instruction they received; complaints are usually reserved for such ancillary services as the cafeteria or the job placement office. Students who are prepared to work in particular occupations usually are employed in those occupations. Those who transfer to universities tend to do as well as students of comparable ability who entered the universities as freshmen; see, for example, studies done in Illinois (Illinois Community College Board, 1984), Florida (Florida State Department of Education, 1984), and California (California State Postsecondary Education Commission, 1984).

However many legislators remain unconvinced. They point to the minuscule percentage of transfers as compared to total community college enrollments. The educators argue that most matriculants had not intended to transfer. The state officials contend that, even so, state funds supported those students' enrollment in transfer-credit classes. In all states there is a severe disjunction between the reimbursement formulas and the students' intentions and the institutions' outcomes.

Sources of Students

Issues of institutional outcome have led to calls for sophomore-level tests, better course articulation between secondary schools and community colleges and between community colleges and universities, and related measures that would heighten student flow. All higher education structures depend on a steady supply of high school graduates to fill their classes but the number of graduates has declined every year since 1977. In that year, more than 3.1 million students graduated from high school but expectations are that only 2.3 million will graduate in 1992. Many community college leaders realize that the universities have first claim on the 18-year-olds seeking baccalaureate degrees, especially if financial aids are available to pay the higher tuition and living costs. Hence they feel they must depend on marginal students: working adults; people seeking occupational preparation for which degrees are not needed; socially or academically immature recent high school graduates; and others whom the universities typically do not serve. Using student flow through the institution as a measure of institutional success seems to inhibit service to those types of students, hence to penalize the community colleges. They want their hybrid educational structures to be recognized and supported for what they are and do.

However, some community college planners are increasing their efforts to recruit students directly from high schools. Numerous strategems have been employed to link the institutions: advanced placement; credit by examination for college courses; offers of courses on the high school campus; use of community college instructors as visiting faculty in high school classes; colloquiums for high school students; math, science, or humanities fairs; and special orientation for students from single high schools. College students who are alumni of a high school have been sent to the school along with college counselors to recruit new students. A college in Iowa developed a set of occupational programs to be offered jointly with the local secondary schools (Poort & Williamson, 1984). A Florida college produced a computer-assisted guidance program for use in its area's high schools (Lockett, 1981). A college in New York has taken responsibility for the education of students from grades 11 to 14 in its district (Lieberman, 1985).

The issue centers on allocation of effort. The colleges have not sufficient resources to develop intense programs for recent high school graduates, local industries, adults, and all the other clients they purport to serve. They cannot do all with equal vigor. How shall they establish priorities regarding particular student groups?

Maintaining the Comprehensive Curriculum

From their beginnings, community colleges have offered freshman- and sophomore-level courses, general education, occupational studies, adult education, and remedial studies. There is overlap among these curricula but distinctive portions of each may be seen in nearly all community college catalogues. All the curricula grew originally with a minimum of state-level coordination; they were organized to fit the peculiarities of each local district and the finding available to it. The freshman and sophomore studies grew largest in colleges where high proportions of the students were intending to transfer to universities. General education in the form of high school postgraduate studies was prominent in districts where few students would be transferring. Occupational programs gained strength as funding became available and as local industries sought trained workers. Adult education became part of the community college curriculum to the extent that local adult school efforts were relinquished by the lower schools. Remedial education, cutting across all programs, grew large as the students seeking enrollment proved less able to participate in the regular college-level curricula and as adult basic education became prominent in areas with a high proportion of immigrants or otherwise marginally literate people.

The five curricular functions have always shifted in emphasis among institutions and from time to time. Around one-fifth of the community colleges in America are predominantly technical institutes. Hence occupational studies occupy the major portion of their curricula. Where the colleges are organized as two-year branch campuses of a university or where they act as major feeders to a local university, college parallel studies dominate. These two primary functions have shifted position; 50 years ago, freshman and sophomore studies centering on the liberal arts accounted for nearly three-fourths of the curriculum. The situtation is now reversed and studies leading to direct employment or to employment-related bachelor's degrees account for around that much of the offerings. The proportion of remedial studies varies with the quality of high school preparation, the proportion of students attending college in a local area, the immigration into the district, and the space available for qualified students to enter universities. All have an effect; overall, remedial study accounts for more than one-third the enrollment in English and mathematics courses. Figures on adult education are elusive because many community service activities taking the form of spectator events or short courses find their way into the count, but students taking courses for credit probably outnumber the noncredit students by more than two to one.

As long as the colleges enjoyed high growth rates, while state budgets for postsecondary education were increasing, and while local funding was available, the various curricular functions waxed and waned within the broadest of guidelines. But as increasing proportions of funding came from the state level and when growth leveled off in the late 1970s, calls for curricular standards, criteria, and accountability became more prominent.

Issues in currfculum emphasis are not new, however. Bogue's 1950 book on community colleges determined that one of the primary concerns for the institutions was in effecting a merger of general education with occupational studies. Blocker's 1965 book considered a major issue to be the maintenance of comprehensive curricular programs. Community college traditions hold that courses useful to anyone who applies should be offered. Accordingly, most college managers strive for curricular balance and comprehensiveness. Questions of imbalance and limitations arise only when funding is reduced or when challenges are brought by external auditors.

The question of which curricula are most valuable, hence deserving of the most support, is merely an extension of the question of which knowledge is of most worth. But political and fiscal considerations are more dominant than philosophical concerns in curriculum formation. A strong faculty group with an interest in the liberal arts, a large local employer with need for especially prepared workers, a state legislator with a mission to improve students' success when they transfer to the universities, or a politically active local senior citizens group can exert a marked influence on curriculum.

Certain philosophically related criteria are often applied whether or not the curriculum managers are aware of them. One of the most forceful criteria is that courses and programs should be more useful to the broader society than valuable to the individual. Hence occupational studies that promise to contribute to the economy win out over avocational or recreational course offerings. This has led to a reduction in much of adult education and an increase in vocational offerings. The issue then becomes, how far in the direction of occupational education can the community college go before it loses its comprehensiveness? Avocational activities are an authorized function of community colleges but they have become increasingly difficult to fund. In most areas they have become self-supporting although not many community colleges have adopted the university model of a completely separate extension division as the agency through which the individually beneficial courses are offered.

A second criterion that is being applied increasingly is that the program should be verifiably educative. Few colleges have taken the initiatiave in providing evidence of student learning obtained, relying instead on the criterion of resources expended as a measure of institutional worth. The assumption has been that as long as a qualified faculty was available to teach, the education was being accommodated. More recently the state agencies have taken an interest; in the past 10 years demands for statewide testing and other measures of program outcomes have spread. Several states now either already have or are considering mandating tests at the sophomore level before a student may receive a degree and/or transfer to a senior institution. Florida has taken the lead with its College Level Academic Skills Test (Losak, 1944).

The idea of testing is not new; numerous programs have been designed to lead students to the ability to pass state licensure examinations. What is new in the 1980s is the notion of testing for the outcomes of all programs. These types of tests move quickly to the lowest common denominator, the three R's. Other statewide outcomes measures include information on the number of students gaining employment in the field for which they had been prepared; Ohio, for example, collects such data annually (Ohio State Board of Regents, 1985). And Maryland typically conducts studies of transfers to the state's universities (Maryland State Board for Community Colleges, 1985).

The verification of education attained typically has several results. One is that courses that have no place in a designated curriculum suffer, thus reducing exploration on the part of the students. This shrinkage in volitional courses affects the liberal arts negatively and it gives a further boost to remedial studies. Since college-outcome examinations primarily measure the students' abilities to read, write, and compute at the most elementary levels, the courses in composition and arithmetic gain enrollments regardless of whether students are planning on transfer or on direct occupational entry. How can the specialized courses, those that have no place in a designated curriculum, those that appeal to students merely for their own interest, be maintained?

The third criterion applied to curriculum formation is the test of whether the courses are readily available elsewhere to the clients that the institution serves. Here the community colleges have a strong case for the comprehensive curriculum since many of the students they serve have no option in college attendance. These students have low prior grades or low entrance test scores and are barred from the selective colleges. They must work and attend college part-time. They must stay in their home community because of family responsibilities. They cannot afford the higher tuition at other institutions. For any or all of these reasons, the community colleges serve a clientele that finds alternative colleges closed. Since college-level offerings are not available to them elsewhere, they find them at their local community college or not at all.

Maintaining each of the separate curricula has its own persistent problems. Are the freshman and sophomore classes comparable in content and rigor to those presented in universities? Do university restrictions on the types and level of courses they will accept for transfer credit limit the colleges' offering of a comprehensive curriculum?

Occupational education has its own set of curricular imperatives. One pernnial issue is matching the curriculum to local employment opportunities. Few community colleges are able to adjust program offerings sufficiently rapidly to accommodate the local job market. Staff must be employed, facilities built, students recruited. The opportunities for employment perforce change more rapidly than the curricula.

A second issue in occupational education is in preparation for baccalaureate-level occupations. Many of the courses that community college students take are occupationally oriented but the student must transfer to a senior institution and complete a program there before job entry is available. Several of the health-related programs and so-called high-level technologies fall into that category. This tends to distort the figures on occupational and college parallel curricula because the same set of courses serves both.

A further issue in occupational education is its articulation with high school programs. Occupational studies are not confined to the community colleges alone; many of the secondary schools from which they draw their students are heavily involved. Cooperation and joint program coordination are continuing issues (Parnell, 1985).

Remedial studies present their own set of issues. A curriculum cannot reasonably outdistance its client's abilities; the students either drop out or fail. Or the institution passes through the students who have not learned nearly what the program purported to teach them. The institution thus shunts the problem to the next level of education. One of the most important benefits of education is access to another year of schooling but if the lower schools maintain a practice of social promotion, their credibility suffers. Furthermore, certificates and degrees given pro forma for student attendance rapidly lose value; witness the high school diploma over the past generation. Since remedial studies are a community college imperative, should they be organized as a separate division of the institution? Would the poorly prepared students fare better if they were allowed to take the regular college credit courses with a mandate that they engage in supplemental remedial work?

The limits of adult education and community service are of increasing concern and these two functions are scrutinized by funding agents who feel they should be on a self-supporting basis. The community colleges strive to serve all possible clients and build programs for children as well as for senior citizens. Are there any limits to what they can offer? Most college leaders would answer that there are none but at the same time they recognize the futility of attempting to get public funds for all purposes. And yet the counter argument that senior citizens have paid their taxes and deserve to have courses directed at their interests has been raised. There is an uneasy balance between charging them for the courses they want and using college funds to pay some of the costs.

The major substantive issue in curriculum is whether the colleges can maintain educational programs that serve social cohesion. Most students want courses that lead to direct employment, and the liberal arts survive because of tradition and the expectations of the universities to which many of the students transfer. Most students feel the pressure for early specialization or the desire for courses that serve their personal interest even when they are not seeking a diploma. Who speaks for an education that leads students to a sense of their nation's heritage, shared understandings, community values, a common language?

Funding

The major procedural issue concerns the relationship between funding and student and course classifications. State reimbursements currently are based on instructional costs, credit hours awarded, average daily attendance, full-time student equivalent enrollments, or combinations of these, with further differentiation often made according to whether a course is categorized as occupational, transfer, remedial, business, health professions related, technical, continuing education, or noncredit. An amalgam of course content, student attendance patterns, institutional costs, and student intentions pervades the funding formulas.

The varied funding formulas can be traced to the history of community colleges in a state. Where the colleges grew out of the lower schools, reimbursement on the basis of student attendance is often included. Where the colleges were organized as technical institutes, different reimbursements based on curriculum classifications prevail. And where they are considered integral with the state's public universities, credit and noncredit course distinctions loom large. But in nearly all states these categories overlap. Studies of the relationships among these variables are clearly suggested because the formulas that are applied in any state affect the types of curricula offered or emphasized and the types of students attracted to the colleges.

The Question of Access

Overriding all is the question of balance between institutional credibility and student access. If the colleges are being held accountable for their students' performance on the statewide examinations, there is always the fear that the colleges will begin to deny access to the less qualified students. Testing and placement at entry has the effect of denying access unless sufficiently rigorous programs are available to lead students to the ability to pass the college's courses and, eventually, the externally administered outcomes tests. If the colleges are to be judged primarily on the percentage of their students who pass the exit examinations, they will suffer the temptation of denying access to the poorly prepared.

Faculty Concerns

An institution dedicated to a variety of services must constantly seek instructors who understand its mission and are qualified to participate. In 1950 Bogue noted a major problem in finding the right kind of teachers to work in the community colleges. His concerns have been echoed throughout the years.

For the first 50 years of community college existence most of its teachers moved in from secondary school positions. More recently the university graduate schools have been supplying sizable numbers of instructors and in the occupational areas people with experience in the field are a main source of supply. There are 250,000 people teaching in community colleges nationwide. Their highest degree typically is the master's but around 25% of the instructors in academic subjects hold the doctorate. Their workload is from 12 to 15 hours per week or from 300 to 450 weekly student contact hours in four or five classes. Since 1974 more than half the instructors have been part-timers. Their median age is between 45 and 55 (Cohen & Brawer, 1982).

Issues surrounding the faculty include instructor effectiveness, assistance, benefits, professionalism, and age. Measures of instructional effectiveness are quite rare. Productivity is typically measured by the number of students one meets. Competence is defined as number of graduate hours or years of experience in the field taught. Salaries are based on these latter qualifications. Comparative measures of instructional effectiveness are rarely undertaken. Can measures relating student learning to instructor activities be developed? Educators in the lower schools and universities alike have had difficulty in isolating the criteria of instructor effect. The community colleges are no closer.

The assistance available to instructors represents an additional concern. Teachers in the lower schools frequently have aides available to them; in the university the teaching assistant is well known. But few teaching assistants ever appear in community colleges because there is no pool of graduate students working on degrees who can be employed to teach at low rates. Some colleges have managed to create situations in which teaching aides or paraprofessionals are employed but these are usually in learning laboratory or tutorial sections. The classroom instructor typically operates in isolation. Less than one in ten of them have readers or paraprofessional aides available and, when asked, not many more than that felt that the availability of such assistance would help their teaching (Cohen & Brawer, 1982).

Unionization has made greater inroads among community college faculty than in any other type of higher education structure. Around one-third of the community college instructors are working under contracts derived through collective bargaining. The intangible benefits and drawbacks of community college instruction are about like those seen in other levels of higher education with the exception that the community college teachers chafe at the large classes and poor academic preparation exhibited by their students.

The instructors are relatively highly professionalized in comparison with secondary school teachers but their level of professionalization suffers in comparison with university professors. The community college instructors are less likely to apply for or receive research grants, publish books or articles, associate with their counterparts in other institutions, or belong to academic associations. They are teachers first, members of an academic profession second. The longer they stay in community colleges, the less their affiliation with their academic disciplines. They use their collective bargaining power for self-interest in obtaining higher salaries and fringe benefits and to a lesser extent to expand their power over the curriculum. But the individual instructors must leave the classroom and become program heads or coordinators before they gain true curricular control.

Aging Faculty

In recent years few new instructors have been employed full-time, hence the average age has increased. For example, whereas one-third of the instructors teaching the humanities in 1975 were aged 35 or younger, that cohort had dropped to 15% by 1983. At the other end of the scale, 24% of the instructors in 1975 were aged 51 or older but 32% were in that category in 1983. In the older, large-city community college districts such as Los Angeles, 20% of the instructors were aged 61 or older.

The aging of faculty has two major implications: cost and responsibilities. Because the salary schedules are typically arrayed so that instructors receive pay increments based on graduate degrees earned and years of service, the costs of instruction increase markedly as the instructors age. The same instructor doing the same job receives salary increases each year (although some pay schedules have ceilings at 15 or 20 years' service) and that person's fringe benefits cost more. Many community college instructors work on additional academic degrees while they are teaching full-time. Hence the longer they are employed the more likely they are to have graduate credits that move them higher on the salary schedule. When new instructors are not employed at lower rates to offset these increases, costs go up rapidly.

Part-Time Instructors

In most community colleges the costs of an aging faculty have been offset by employing part-time instructors at an hourly rate for considerably less money (Boggs, 1984). This accounts in large measure for the figures showing 57% of the instructors as part-timers (American Association of Community and Junior Colleges, 1985). But an institution needs some minimum number of full-timers to manage the instructional program and, in order to maintain its status as part of higher education, it needs instructors who are available to advise students and perform ancillary chores. Typically the part-timers meet their classes and leave the campuses. There are no rules or precedents for the ratio of full-timers that must be maintained for the college to keep its credibility and the students not to suffer from instructor unavailability, but certainly some colleges have approached a minimum point.

Finding New Teachers

If the colleges are to maintain a minimum cadre of full-time instructors, some intensive hiring will have to take place during the next decade. The laws of demography mandate that nearly half the full-timers will be retiring by the end of the century. This will reduce the pressure on the teaching budgets because the new people who are employed to replace them will come in at lower rates. But university-based preservice programs designed especially to prepare community college instructors are few and inservice preparation at the colleges themselves is not well structured. The community colleges are similar to the universities in their insouciant approach to faculty preparation, typically taking the position that anyone with an academic degree or some experience in an occupation can teach that subject or trade.

The major problems in finding new teachers center on the dearth of particularized preservice and inservice instructor preparation programs, and on the inconsistent or archaic criteria on which instructors are employed and retained. People to staff the classrooms can always be found as long as the salaries remain competitive. In recent years instructor salaries in most teaching areas have become comparable with those offered to people with similar training in other fields. But in some fields, industry offers much more. Furthermore, the college as an academic enterprise demands more than staff who will go through the routines of meeting classes. It needs a cohort of professional practitioners working together to advance the enterprise. Outside nonacademic institutional managers cannot do it.

Criteria for Hiring

On what criteria shall the faculty be replaced? Most institutions now use the historical criteria of a master's degree in the academic subject to be taught or a number of years of experience in the occupational field. Teaching credentials certifying that type of preparation are required in many states (Burks, 1984). But those criteria do not evidence teaching ability, a quality assumed, not measured.

Faculty Development

The faculty evaluation and salary schedules reflect advancement for additional course work. Instructors with earned doctorates receive higher pay. Should the colleges maintain such a criterion even though the teaching ability of people with doctorates is not demonstrably different from those without? The colleges do not expect or reward research in an academic field; their giving higher pay to doctoral degree holders may be misguided (Cohen & Brawer, 1977).

Within the institutions, faculty development programs are poorly formed and the concept of instructional aides or assistants is not well known. The faculty take a dim view of workshops on teaching procedures unless they are conducted by other instructors from within the discipline. The faculty welcome travel money and sabbatical leaves along with reduced teaching loads and released time to work on course preparation. However, all of these benefits do more to build morale than they do to enhance teaching effectiveness. The faculty who retire can be replaced with others who, because they are younger, can be paid a lower rate. But that does nothing to enhance the quality of the institution unless changes are made in faculty preparation and inservice evaluation and development.

Curriculum Planning

Historically the management of curriculum and instruction in the community college has been the province of administrators. Because the community college in many states evolved out of the secondary school systems, the tradition of management by an administrator, tne school principal, prevailed. Community colleges typically have a dean or vice president of instruction whose function has been to coordinate curriculum, course planning, and instructional activities. The advent of collective bargaining in community colleges has done little to move that type of planning over to the faculty. However, in many of the larger institutions the dean of instruction has become more a dean of personnel management than a person with responsibility for managing instruction. Furthermore, as in the lower schools, there is much state-level review of programs and course offerings.

These characteristics pointing to the community colleges' similarity to the lower schools are mirrored in faculty responsibilities. There is a continuing struggle between faculty who would take more command of curriculum and instruction and the requirements of state agencies and the traditions of administrative management which put most of the essential elements of instruction beyond faculty control.

Future Roles of Faculty

Few indications of change in faculty role are apparent. As a group, the faculty has not taken steps to professionalize itself by seeking funds to employ instructional aides. Preservice preparation and credentialing continues as course work or experience in the subject area to be taught. Inservice training is accorded lower priority than fringe benefits for the staff. Faculty replacement will occur, but the issue of the effect of the sizable turnover remains open.

Summary

The four sets of issues may be summarized as follows.

1. Access:

    A. How long does the public's obligation to provide educational opportunity to every applicant continue? Can any student take courses indefinitely at public expense?

B. To whom does the community college have primary obligation? Students just out of high school? Adults seeking career change? Senior citizens?

C. Must college applicants display some minimum level of intelligence or prior educational attainment?

D. Should the college mandate entrance tests and, based on the results, place students in certain classes or programs?

Trends are toward tightening criteria for attendance. The colleges in some states will be forced to make clearer distinctions among the student groups they would serve and for whom they expect to receive public funds. Minimal criteria will be established. Placement will be mandated.

2. Student Flow

A. On what criteria of student achievement should the colleges be appraised? Degrees attained? Exit test scores?

B. Should colleges be funded on the basis of costs, number of students attending, number of students completing programs?

C. Should different types of programs or courses be funded under different formulas?

D. Can the colleges be supported as community education centers not accountable for the students' obtaining jobs or further schooling?

Funding formulas that take into account the variation in student intent seem to be emerging. Differential funding or programmatic funding bodes to become more prominent than the prior pattern of reimbursement based on student attendance. As a quid pro quo the colleges will probably become more vigorous in separating students, courses, and programs into more defensible categories.

3. Maintaining the Comprehensive Curriculum

A. On what basis should curricular priorities be assigned?

B. What balance among liberal arts, occupational skills, recreational activities, and basic skills courses should be the colleges strive to maintain?

C. Should remedial studies, occupational programs, liberal arts, and recreational studies be organized separately?

D. How can the colleges attend more directly to curriculum that is concerned with fostering a sense of social responsibility?

Except in states where the colleges are directed especially toward occupational studies, they will maintain a comprehensive curriculum. College internal organization will move away from the indistinct categories of "transfer," "occupational," etc. and toward alignment on the basis of curricular content as modified by student intent. The students' own individualistic goals will remain paramount.

4. Faculty Concerns

   A. Can measures relating student learning to instructor activities be developed?

   B. On what criteria should instructors be evaluated? For what purposes?

   C. What sources of new instructors should be primary for replacing the faculty members who leave?

   D. Should the faculty strive toward a higher level of professionalization? If so, on what criteria?

Faculty employment and evaluation criteria will remain essentially unchanged. The university graduate divisions and the occupational and business communities will continue as the primary source of new instructors. Pay scales will continue to reflect college credits earned and years of experience. Teaching will move but slowly toward becoming a cooperative endeavor.

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CURRENT ISSUES IN EARLY CHILDHOOD EDUCATION

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If present trends in family life and education continue into the next decade, most children under five will spend substantial proportions of their early years in various types of early childhood programs, most five- to six-year-olds will attend all-day kindergarten, and during their elementary school years they will spend much of their time before and after school in some kind of out-of-home setting.

Legislative initiatives addressed to the needs of young children have increased across the country alongside the school reform movement. By the end of 1985, at least 28 states had enacted legislation for a variety of early childhood provisions. In fact, the National Conference of State Legislatures cited early childhood education and child care as one of the most significant new areas of legislative activity in education in 1985 (Morado, 1985) and the National Association of Elementary School Principals adopted the recommendation that states should create full-day programs for all four-year-olds.

Fifteen states and the District of Columbia already fund some pre-kindergarten programs for four-year-olds in public schools (Morado, 1985). Nine states now have universal preschool education available for the handicapped, and a variety of similar initiatives is being considered in many other states. In February, 1986, the National Governors' Association held a major conference on early childhood sub-titled "Focus on the First Sixty Months" in which state officials and early childhood specialists met to consider the many problems confronting school districts as they respond to this widening trend. Some of the main issues are defined and discussed briefly below.

Four-Year-Olds in the Schools

The accelerating trend toward participation of four-year-olds in public schools is the consequence of several converging forces. The single most powerful one is certainly the growing proportion of mothers of preschoolers whose entrance into the work force gives rise to an acute need for provisions for their children. Another substantial force is the "well-publicized research documenting the positive long-term effects and cost-effectiveness of preschool programs (Morado, 1986, p. 61; Berreuta-Clement et al., 1984), particularly for those populations judged at risk for school failure. Both of these forces, augmented by the school reform movement, resulted in preschool programs becoming "part of the package" of academic reform (Morado, 1986, p. 61). Another less obvious factor contributing to the trend is the widespread excess of classroom space and teaching personnel due to shrinking enrollments in the upper primary grades in many school districts.

It should be noted, however, that some opposition to the trend toward public school programs for four-year-olds has appeared in the press as well as in some professional publications. Three major objections have been expressed. The one most frequently cited is that such programs, because they are to be conducted in schools normally serving elementary-age children, will inevitably adopt formal academic teaching methods that early childhood specialists generally consider developmentally inappropriate for under-six-year-olds (Kagan, 1985). These critics also point out that the research reporting positive long-term benefits of early education programs is based on the kind of high quality of staff and program implementation unlikely to be duplicated in most school districts (Zigler, 1986). Others who oppose the trend cite the special risks of public school programs for young black children, suggesting that such children need comprehensive programs that include health, nutrition, social services, and parent involvement, as well as informal curriculum methods (Bowman, 1985; Hymes, 1986). Such opponents suggest that the record of the public schools is one of unrelenting insensitivity to the needs of minority groups, insensitivity to which their children should not be exposed any earlier than necessary (Moore, 1986). Some opposition to this trend toward greater preschool participation for normal children has also been expressed by the Hewlitt Foundation ("Do we really want preschool?", 1984) who interpret the available evidence to suggest that young children should not be "condemned to institutional life before [they] are ready" (p. 2). The Hewlitt Foundation supports the view that young children are more likely to thrive at home with their mothers.

Hymes (1986) captures the spirit of the disputes in pointing out that for four-year-olds:

> the goal of their school is to help them live their four-year-old life with richness and vigor--not to housebreak them for becoming Five or Six. Fours will be in trouble unless there is appreciation and enjoyment of their energy, their imagination, their curiosity, their sociability, their creativity. It must be understood that the goal of their school is to nourish these strengths, not to dampen them. (p. 2)

Full-Day Kindergarten

Virtually all of the same factors mentioned in connection with the move to include four-year-olds in the schools have also contributed to the widespread adoption of full-day kindergarten programs: the steady increase in maternal employment, parental expectations that children should begin their academic training early, and the increasing belief among school officials that standards of achievement in the elementary school can be enhanced by starting children on academic careers early and using the longer day in the kindergarten as valuable academic work time. In addition, many educators and parents also hope that the provision of full-day kindergarten programs will help reduce widespread fragmentation in the lives of many young children who typically go from baby-sitter to school to day care center most days of the week.

Research on the effects of full-day versus half-day kindergarten programs is, at best, inconclusive (Glazer, 1985). As Hatcher and Schmidt (1980) suggest, research that takes into account the full range of variables associated with the longer kindergarten day is still very much needed. The measures of effectiveness taken by various school districts make comparisons difficult, and many factors related to the community, characteristics of the staff, and availability of educational resources may all contribute to the outcomes of evaluations comparing full- with half-day programs.

School Entry Age

Another issue related to those outlined above is the optimum age of school entry. As Fitzgerald, Ronk, and Howe (1986) report, there is much confusion among parents and teachers, administrators, and policy makers about the appropriate age and developmental level needed for success in the early grades in elementary school. Traditionally the schools accepted all children in kindergarten if they had reached the age of five by a given date, and the instructional program was modified to accommodate the range of developmental levels present in the group. Currently available data indicate that as few as three or four months' difference in entry age affect success in the primary grades. However, such findings are difficult to explain and to interpret since three or four months' worth of development in the fourth and fifth year of life are not associated with dramatic differences in behavior. Yet younger children seem to be retained in grade more often than their older peers. The apparent differences in success of children entering school later may be more related to teacher expectations than to real advantages of a few months' seniority in age.

Readiness

Another issue raised in connection with the inclusion of younger children in public schools and with the introduction of academic work into the kindergarten year is the assessment of children's "readiness" to profit from it. Although the term "readiness" is used widely and frequently by school personnel and parents, it is a difficult one to define. In the child development literature it has been associated with processes of maturation, in particular with physical development. However, the extent to which the concept of "readiness" can be generalized from physical to other aspects of development is a point of strident debate among specialists.

The idea that children develop at different rates, and that, within a given child, some aspects of development may lag behind others, seems well established. The correct use of the concept of developmental "readiness" is antithetical to requiring that the children "fit the curriculum." On the contrary, adherence to the concept implies a willingness to adapt the curriculum to the "readiness" the children bring to the school with them. As the concept of "readiness" is used by the schools, however, the issue seems to be whether or not a child is judged ready to benefit from an existing prespecified set of instructional activities. In order to establish a child's "readiness" to enter school, varieties of screening and testing procedures are employed.

Screening

Most school districts institute screening procedures for kindergarten placement. By means of screening they hope to minimize the chances that children will confront instructional tasks they are unready for (Fitzgerald, et al., 1986). Aside from questions about what aspects of a child's functioning should be screened before admission to kindergarten, and how extensive a sample of behavior is necessary for a reliable assessment, it is very likely to be risky as well as inappropriate to use a single measure of any kind as a basis for deciding whether a young child is ready for school. As Black points out, "While inappropriate use of standardized testing can occur at all levels of the educational ladder, it would appear that the greatest potential for harm exists during the early childhood years" (cited in Fitzgerald et al., 1986, p. 3).

In districts in which screening or testing for kindergarten "readiness" is a large-scale undertaking, problems arise over obtaining enough trained and experienced testers. The use of inexperienced and untrained volunteers for screening means that the instruments selected must be easy to use and therefore likely to be among the least valid and reliable ones available (Shepard & Smith, 1985). Often volunteers are given brief but intensive training in test administration. However, many of them drop by the wayside before the testing program can be completed, and, more often than not, untrained testers are used. The quality of the assessments obtained is questionable in such cases. The seriousness of this kind of predicament stems from knowledge that once a child has been identified as falling into a special (versus normal) category, the label is very likely to stick. The combination of poorly or non-trained testers and very young children unfamiliar with the screening or testing situation and therefore apt to be anxious, makes it very probable that important and non-negligible errors are made that could have important long-term consequences for individual children.

Alternative Programs

Once a screening or testing procedure is in place, most school districts make provisions for those children who fall below a particular "readiness" standard. Many school districts that have chosen to provide formal academically-oriented kindergarten programs adopt an alternative curriculum for these children. These alternative programs, sometimes called "junior" or "developmental" kindergarten, generally emphasize play and socialization and correspond very closely to a traditional kindergarten curriculum. While such programs delay the un-ready child's confrontation with academic work for one year, the question of whether they should enter kindergarten at the end of it or go directly to the first grade is problematic. School policies prohibiting such "developmentally delayed" children from joining their age-mates in the first grade result in wide age span in the later grades. In many communities, parents object to the age range, sometimes because younger children seem to be at an academic disadvantage, and sometimes because the younger ones are fearful of being bullied by the larger older ones.

Retention in Grade in the Elementary Years

The practice of requiring slow pupils to repeat a grade has a long history and is frequently the subject of strong sentiments among school personnel and parents. The practice of "social promotion" adopted in the 1930's has been strongly criticized in much of the recent school reform literature, and the proportion of children "retained in grade" seems to be increasing.

Research on the effects of retention in grade on both academic and social development has been inconclusive, mainly because findings are contradictory, but also because methodological problems inherent in most of the relevant studies may invalidate their results. First-grade children tend to be retained more often than any others. With children's increasing age, retention rates decline until sixth grade. They begin to climb again in seventh grade and throughout high school.

The decision to retain a child is based on diverse criteria such as classroom behavior, achievement test scores, and teacher ratings of maturity. Variations in school and teachers' philosophy also contribute to retention decisions. Without conclusive empirical evidence, policies with respect to retention and promotion are likely to be based on social norms and values and general philosophy about education and the role of the school. Among the important considerations often neglected in the heat of debate over the value of retention is the quality of the learning experiences offered to the child during his second turn in the repeated grade.

An extensive review of the available research on grade retention (Plummer, Lineberger, & Graziano, 1986) indicates that the practice of grade retention, though still very widespread, does not guarantee that the child will reach the required standards for promotion to the next grade at the end of the one-year repetition. The bulk of the evidence currently available indicates that, on balance, retention in grade is not an effective strategy for improving academic competence and may be a deleterious one with respect to social development.

Curriculum Issues in Early Childhood Education

The majority of children today enter kindergarten with at least a year, often two or three years, of prior group experience. Thus the traditional purpose of kindergarten to ease children into the transition from home to the larger outside world, has lost much of its relevance. Disputes concerning what goals make sense for the contemporary kindergarten, sandwiched as it is between preschool and first grade, have arisen in many communities.

The "Push-Down" Phenomenon

Among parents and between parents, school boards, administrators, and teachers, there are serious disagreements over the extent to which the main goal of kindergarten is preparation for first grade and for the academic work hitherto postponed until the first-grade year. This issue is debated with such new phrases as "hothousing" (Collins, 1985), or "curriculum shove down" (Hatch & Freeman, 1986). Groups of parents, administrators, and teachers struggle with this so-called "push down" phenomenon in which play and creative activities traditionally associated with prekindergarten and kindergarten programs are replaced by formal whole-group instruction. School districts taking this approach usually put heavy emphasis on beginning reading instruction, traditionally set aside for the first grade. Several professional early childhood groups, including the 55,000-member National Association for the Education of Young Children, have issued "Position Statements" (Sub-Committee on Public Policy on Kindergarten, Chicago AEYC Commission on Child Development and Elementary Schooling, n.d.; Texas Association for the Education of Young Children, n.d.; SACUS speaks out, 1986, April; National Association for the Education of Young Children, 1986, June) that contain strong objections to the introduction of academic work in prekindergarten and kindergarten.

Interpretation of the available evidence concerning the long-term consequences of introducing prekindergartners to formal instruction is fraught with a range of methodological difficulties. Among them are concerns with appropriate criteria of effectiveness, reliability of assessment instruments, and substantial attrition in the sample as children move up the grades and from one community to another.

Comparative Effects of Different Kinds of Curriculum Approaches

Powell (1986) points out that there has been a shift in the public debate over early education. The concern of two decades ago over whether early childhood programs have lasting benefits has now been replaced with questions about what kind of early education has the greatest long-term effectiveness. The assortment of kinds of early childhood programs can be broadly classified into two major types: formal teacher-directed approaches, sometimes referred to as didactic, versus informal child-centered models, sometimes called non-didactic. In reviewing a group of longitudinal follow-up studies comparing the effects of the two main types of early childhood programs, Powell (1986) points out that the longitudinal data suggest that the kind of early childhood program attended by low-income children may affect them through their middle-school and early teenage years. It is interesting to note that in two longitudinal studies in which the Montessori approach was included as one of the non-didactic types of early childhood programs, Montessori programs had very favorable long-term effects on the children enrolled in them (Douglas, 1986, pp. 62-63) and the effect was strongest for boys.

Results of long-term follow-up studies comparing the effects of three curriculum models conducted by the High/Scope Foundation (Schweinhart, Weikart, & Larner, 1986) indicated that 15-year-olds who had been enrolled in non-didactic informal prekindergarten programs showed significantly lower juvenile delinquency rates than age-mates who had been in formal ones. However, the sponsors of the didactic formal program dispute the interpretation of the results (Gersten, 1986). Longitudinal studies typically show that children enrolled in didactic programs in the early years show impressive gains in IQ and achievement scores during and very soon after their experiences in the programs, but that their superiority is not sustained throughout the elementary years.

Studies comparing various early childhood models over shorter periods also raise questions about the differentiated effects of the models. Stallings (1975), for example, compared first- and third-grade children in Follow-Through classrooms varying in teacher directiveness and application of positive reinforcement. Her data indicate that children scored higher on reading and mathematics achievement tests in classes in which teachers exercised greatest control, but that in the more flexible classes children scored higher on nonverbal problem-solving and willingness to work independently and had lower absence rates (cited in Powell, 1986), suggesting more positive attitudes toward school in general. There is some suggestion in these data that a strong showing in the achievement domain may be obtained at the expense of progress in the social-emotional and attitudinal area.

Disputes between those favoring informal child-centered approaches and those committed to formal academically-oriented approaches have been observed for at least two generations of educators, and are unlikely to be resolved by empirical studies, since each side finds flaws in the data produced by the other. All in all, the comparative data now available suggest that communities planning to enroll four-year-olds and to expand their kindergarten programs to full day, face the challenge of enhancing children's academic development and their social-emotional growth at the same time. There is no a priori reason to assume that academic and social goals are mutually exclusive ones.

Parent Involvement in the Schools

The involvement of parents in their children's schools has received a great deal of attention in the school reform literature produced since 1983. In First Lessons (1986), Secretary W. J. Bennett makes a very strong pitch for various kinds of parental involvement in their children's education.

Two distinct aspects of parent-school relations have been featured in the literature: (a) parental influence on various aspects of schooling and (b) the education of parents to enhance their contribution to their child's academic progress. Much of this literature urges parents to exert their influence on the curriculum and the conduct of schooling while it also enjoins the schools to educate parents so that their children will be more receptive to schooling. There is a certain amount of irony in the suggestion that if the nation is not to be at risk the schools should be monitored and influenced by the very same people it should educate to be more competent parents!

In the meantime, teachers report that relations with parents constitute one of the greatest sources of stress they experience on the job. Much more work is required before all the potential benefits of parent involvement in the schools can be realized.

Parents' Influence on the Schools

While parents have always influenced schools in the U. S. A., the influential parents have traditionally been limited to those in the community who were both vocal and powerful. Since the mid-1960s efforts have been made to widen the representation of parents who exercise influence on school practices. Success in this effort creates a host of new problems: the wider and more colete the representation of parents in a school community, the less likely there will be consensus on what the parents want the school district to offer or withhold. Reform proposals directed toward the improvement of teaching frequently include suggestions for parental participation in teacher evaluation. In this matter as well, the more fully the community is involved in such evaluation procedures, the more likely differences of views will emerge. Thus greater involvement seems inevitably linked to increasing contentiousness between educators and their clients.

In a comprehensive review of research on parental involvement in the schools, Becher (1986) reports generally positive effects for those programs she evaluates. Specifically, she indicates that parents who become involved in their children's early childhood programs exhibit more positive attitudes toward school and school personnel than those who do not. Such parents also tend to gather greater community support for the schools' programs and become more involved in community life. In addition, some research indicates that parent involvement also leads to improved relationships between parents and children and greater contact between parents and their children's schools. Becher also notes that research shows that

> teachers, when associated with parent-involvement efforts, have become more proficient in their instructional and professional activities, allocated more of their own time to the instructional function, become more involved with the curriculum, and tended to experiement more. In addition, they have more student-oriented rather than text-oriented curricular activities...[and] there is substantial evidence indicating that children have significantly increased their academic achievement and cognitive development. (Becher, 1986, p. 95)

In summarizing the research on different approaches to parent involvement Becher (1986) lists several attibutes common to successful approaches:

1. The inclusion of parent meetings, and workshops;

2. Using parent-teacher conferences to inform parents about ways they could become involved in their child's education;

3. Increasing the amount and specificity of information transmitted to parents about their child's education and performance in the program;

4. Encouraging frequent visits to the program/school and involving parents directly in teaching activities;

5. Encouraging parents to become involved in the decision-making processes of the programs as well as evaluation activities.

Together these characteristics of parent involvement programs tended to increase parents' influence on the program and have positive effects on their children's experiences as well.

Although relatively little research has been reported on the relationships between parents and teachers, available information indicates that teacher-parent contacts have increased recently, and that increasing contacts have been initiated by both sides (Mager, 1980). Epstein (1983) reports that survey responses of parents of over 1,200 first-, third- and fifth grade students indicated that parents' attitudes toward their children's schools and teachers were generally positive. However, many parents received few or no communications from the school and few were involved with the school at all.

Parent Education

Another aspect of parent involvement is the schools' attempts to help parents in their child rearing practices in such a way as to improve their children's school performances. Once again, those parents whose children most need support, stimulation, and encouragement from home are least likely to be responsive to these efforts. Such parents typically are reported to feel ashamed and embarrassed in front of school officials. On the other hand, parents who are moderately confident in their child rearing roles are more highly responsive to assistance offered to them. There is also some reason to believe that parents are most likely to be responsive to the help available in parent education programs when their children are under six or seven years old (Durio & Hughes, 1982).

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ISSUES IN AMERICAN INDIAN EDUCATION, MEXICAN AMERICAN EDUCATION, MIGRANT EDUCATION, OUTDOOR EDUCATION, RURAL EDUCATION, AND SMALL SCHOOLS

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This chapter contributed by the ERIC Clearinghouse on Rural Education and Small Schools will discuss issues related to its six scope areas in the following order: American Indian education, Mexican American education, migrant education, outdoor education, rural education, and small schools.

American Indian Education

According to the 1980 census, 1,418,195 individuals reported their race as American Indian, Eskimo, or Aleut. This represents a 72% increase over the 1971 total of 827,268 (Paisano, 1984). American Indians are one of the fastest-growing and youngest ethnic groups in the country with the median age of 18 (American Indians--U.S., 1984). In 1980, 394,708 Indian children were enrolled in elementary and secondary schools and 83,903 were attending institutions of higher education (Plisko, 1984). American Indians are educated in public, parochial, private, and Bureau of Indian Affairs (BIA) schools, as well as off-the-reservation, in rural areas, and in urban areas.

The Indian peoples' greatest asset is their young. They are becoming increasingly more willing to involve themselves in their own destiny and to help shape the type of education that they receive. They are becoming better educated and more aware of the choices open to them. They are qualifying themselves for employment in a broader range of fields. To meet the challenge of education for their children, Indian people have begun to take responsibility for the quality of education that their children receive (Goodeagle, 1984).

Achievement of American Indian Students in Math and Science

There is a growing interest in motivating American Indian and Alaska Native students to higher achievement in math and science. This in itself is a great challenge for Indian youth and their educators. A primary reason is that American Indian youth have a much higher high school noncompletion rate than whites and leave school earlier. The high school dropout rate of American Indians is similar to that of Hispanics; 40% aged 18 and 19 are dropouts with higher percentages in some states such as New Mexico. In the High School and Beyond longitudinal study of sophomores in 1980, about 14% of one-half million students of all racial/ethnic groups dropped out of school during a two-year span from spring, 1980 to spring, 1982. Of this 14%, American Indians and Alaska Natives had the highest dropout rate, 29% greater than any other racial/ethnic group (Peng, 1983). Research data reveal that the difference between academic performance of American Indians and that of white students widens with each succeeding year, especially between grades 10 and 12. The pattern is most pronounced in mathematics where American Indians are 2.4 years behind white students in the sixth grade and 1.7 years behind the national norm as a whole, and this trend increases through the grades. For example, at grade 12 Indian students are 4 years behind white students and 3 years behind the national norm (Southwest Indian Report, 1973).

Of all minority groups in the United States, American Indians and Alaska Natives are the most poorly represented in the natural sciences, the health sciences, and mathematics, yet these areas are critical to the growth and prosperity of the Indian people (Green, 1978).

Often American Indian students do not recognize the connection between learning mathematics and science concepts today and helping their people in the future. Yet, tribal groups are sorely in need of their own doctors, scientists, computer specialists, and other highly skilled technicians. Many Indian students drop math and science courses that they need to qualify for certain jobs and careers, courses they need for basic skills, and courses that would lead to a greater level of academic achievement. According to Green (1978), many American Indians rarely consider careers in scientific and technical fields because of a perception of themselves as hopelessly incompetent in the mathematical and scientific skills needed for a particular occupation.

This may be a result of school counselors failing to encourage American Indian, as well as black and Hispanic, students to enroll in higher level math and science courses and a failure to encourage these students to consider careers in math- and science-related fields (State-of-the-art report on mathematics achievement, 1980).

Another contributing factor for low achievement in math suggested by Leap (1982) and Moore (1981) is the incompatibility between mathematical concepts and the American Indian languages. They hypothesize that Indian languages, such as Navajo and Zuni, have styles of thought and communication which are not compatible with the understanding of mathematical concepts and problem-solving.

Bradley (1982) suggests a culture-based approach to teaching mathematics to Indian students. She suggests that three domains must be considered: the cognitive domain, the affective domain, and the social domain. In the cognitive domain Indian students must be encouraged to reconstruct mathematical ideas, create problems, test ideas, complete classwork, and seek to learn more mathematics on their own. Indian students need to develop spatial relationships, which can be accomplished through creative uses of hands-on materials, as well as calculators and computers. In the affective domain Indian students need support and counseling from Indian community members and mathematics-related professionals. In the social domain Indian students may need briefing on mathematical language, test-taking strategies, and/or appropriate problem-solving techniques prior to taking higher math courses. Bradley (1982) also strongly suggests that culture-based mathematics should not push aside the main focus of learning mathematics, but would be most effective if Indian community members took primary responsibility for developing culture-based mathematics teachers in the schools.

Several universities have implemented special summer programs for American Indian youths interested in mathematics and science, who have talents in those subject areas and need encouragement to continue their studies. Examples of such summer programs are Health Careers Orientation Program for Minorities sponsored by Fort Lewis College, Durango, Colorado; Pre-College Career Seminar sponsored by Indian Resource Development, New Mexico State University, Las Cruces, New Mexico; and a Summer Institute for high school graduates, sponsored by the Council of Energy Resources Tribes (CERT) and the Colorado College TRIBES Program, Colorado Springs, Colorado.

American Indian Child Welfare and Education

In the past three years, the number of family and child welfare cases being handled by Indian courts has increased greatly. Judges have been forced to separate children and families because no dispositional alternatives exist. The separation rate of American Indian families has been, and continues to be, disproportionately high in relation to the rest of the population. In 1969 and 1974 surveys showed that 23 to 25% of all Indian children were separated from their families and placed in foster homes, adoptive homes, or institutions (Process for Developing, 1983). More recent figures tend to indicate that this disproportionately high separation rate continues. For example, the number of family breakups on one western reservation in 1981 was estimated at 50 and 75% (Process for Developing, 1983). Similarly, an October, 1980, article by the Director of the National Indian Youth Council states that if the boarding school population is added in, the result is that approximately 50% of all Indian children are not with their natural parents (Wilkinson, 1980).

The question of why American Indian families suffer such a high rate of separation is repeatedly asked. Tribal judges tend to agree that a contributing cause for great numbers of Indian children-neglect cases is that many American Indian parents do not understand the role and responsibilities of parenting (Process for Developing, 1983).

Child-rearing practices among Indian people have been closely related to the extended family concept, and in that respect have depended on more than just the parents of the children. As the Indian extended family becomes more and more a thing of the past, Indian parents find it more difficult to be "good parents" (Indian Culture, 1980).

The factor of boarding schools in the lives of most Indians has also been disruptive in the sense that so many of the Indian parents of today were raised in highly authoritarian boarding schools, apart from their own parents, and thus had few good parenting models (Process for Developing, 1983). The national increase in teenage pregnancy, the growing numbers of single parents, and the rising divorce rates have also affected Indians, just as they have other segments of society. Increased drug abuse and alcoholism have also become additional factors in poor parenting practices.

The following is a list of specific factors involved in Indian child abuse and neglect among young Indian parents in the urban setting, culled from a report by the Oakland Urban Indian Center (Indian Culture, 1980):

- a special form of immaturity and associated dependency that has been precipitated from the boarding school era and is mitigated by rising numbers of teenage pregnancies
- a tragically low self-esteem and sense of incompetence resulting from a feeling of racial inferiority imposed by the dominant society over the past centuries
- difficulty in seeking pleasure and finding satisfaction in the adult world
- difficulty in adjusting to the demands of the dominant society which is seen as being both exclusive and requiring assimilation
- feeling of loss of control and power (the frustration that comes from a feeling of helplessness up against a greater force that appears to be the enemy)
- social isolation, from the extended family or any other support community to assist in child-rearing
- lack of parenting skills (misperception of the infant's abilities, lack of empathy for the infant's needs, fear of spoiling the child, strong belief in the values of corporal punfshment, lack of access to resources, programs and services)
- difficulty in coming to accept responsibility for their own lives
- overcoming external and internal limitations to their ability to provide an adequate living

In an attempt to promote Indian child welfare, the National American Indian Court Judges Association was awarded a grant of $101,970 in 1982 to develop a model process which social service providers could use to develop culturally relevant parent education/skills development programs and materials. Four reservations served as pilot programs--Zuni Pueblo in New Mexico, Fort Belknap Reservation in Montana, Cherokee Reservation in North Carolina, and Ponca Reservation in Oklahoma (Process for Developing, 1983).

Since the initiation of these four programs, other tribes have begun parent education programs in their communities. Another example of promoting parenting programs is the Ford Foundation's program, Teen Father Collaboration, which is an attempt to extend to teenage fathers the counseling and other social services often only available to teenage mothers (Rose, 1985).

As the children of Indian parents enter school, parental involvement becomes an issue. The quality of the relationship between Indian parents and their child's teacher is important since this will be reflected in the child's attitude toward school and behavior in school.

The lack of involvement of these parents is often misinterpreted to mean disinterest in the education of their children. A more accurate assessment of their behavior is that they lack experience in interacting with school personnel; feel they do not have the expertise warranted to speak about the curriculum or counseling needs of their children; and are doubtful about how their input, once given, will be received or implemented. Not wishing to feel intimidated or appear foolish, they remain inactive but not disinterested (Indian Culture, 1980).

Like other parents, American Indians and Alaska Natives need to know that their involvement in the education of their child is desired, needed, and valued.

Mexican American Education

Hispanic Americans are America's most emergent minority. According to the 1980 census, there are approximately 14.6 million Hispanics in the United States. Although united by a Spanish language background, the Hispanic population is diverse and is composed of three major subgroups, with Mexican Americans being the largest group. The 1980 census indicated that there are about 9 million Mexican Americans residing in the United States, representing a 93% increase over the 1970 census data. The majority of Mexican Americans reside in the six states of California, Texas, Colorado, New Mexico, Arizona, and Illinois, with by far the largest concentrations in California and Texas. The Mexican American population is young, having a median age of about 22 years. About one person in nine is a child under five years of age. Mexican Americans have the country's highest birth rate. In an era of declining public school enrollments, the Mexican American proportion of the public school population is growing. As a rapidly growing and young population, Mexican Americans are faced with numerous educational challenges.

Academic Achievement

The educational condition of Mexican Americans has been characterized by below-grade-level enrollment, high dropout rates, high rates of illiteracy, and a low number of school years completed. The median number of school years completed by Mexican Americans aged 25 years and older is 10.3 as compared to 12.5 for non-Hispanics. Although conditions vary, Hispanics often attend overcrowded and poorly equipped schools which have lower per-pupil budgets than other schools in their areas. As a result of housing patterns and the growth of the Hispanic youth population, over two-thirds of all Hispanics attend schools where over 50% of the student population is minority. According to Brown, Rosen, Hill, and Olivas (1980), Hispanics are often over-age for their grade levels due to language problems experienced in earlier years. As a result, almost 52% of all Hispanics enter high school over-age and many have poor grades. Even though Mexican American students enter high school with as high aspirations as any other group, the courses they take are not consistent with the high aspirations they report when they enter school. Many Hispanic students are not in strong academic programs while in high school. Only 26.9% of these students are in strong academic programs, as compared to 39.8% of the non-Hispanic students. The majority of these students are clustered in general (41.6%) or vocational education (31.5%) programs. Contributing to the high dropout rate of Hispanic students is the fact that some of these students are attracted to the world of work. In 1980, Hispanic male students were more likely to hold full-time jobs than were Anglo or black male students. They averaged more hours of work per week while attending school. According to the National Commission on Secondary Education for Hispanics, of the Hispanic males in the 1980 high school sophomore class who left school before graduation, more than 25% left to accept an offer of work (Make Something Happen, 1984). Many of these students left school in order to contribute to the support of their families. Such factors as self-concept, attitudes toward school, motivation to achieve, language deficiency, bilingualism, cognitive development, and teacher attitudes have also been identified as determinants of low academic achievement of Mexican American students.

Efforts have been made to provide educational programs which would be compatible with the special needs of these students. Bilingual, multicultural, and compensatory education programs have been provided throughout the school process of some of these students. Interventions have been implemented at the level where attrition is presumed to occur--in high school. For example, work-study and extended day programs at the high school level have been geared toward helping poor youth to stay in school. Alternative high school programs for "potential" dropouts have been implemented to address these "at risk" students' academic underachievement and their mismatch with the regular high school environment.

Access to Higher Education

Although Mexican Americans comprise the largest subgroup of Hispanics, their enrollment in institutions of higher education has remained minimal. In 1980, out of approximately 9.3 million undergraduate students enrolled in institutions of higher education in the 50 states and the District of Columbia, about 4.2% were Hispanic, 10% were black, 2.3% were Asians, and 0.7% were Native Americans. Data from the Center for Statistics (1986) indicate that during the 1984-85 school year higher education enrollment included 80.8% white, 8.5% black, 4.2% Hispanic, 3.1% Asian/Pacific Islander, 0.7% American Indian/Alaska Native, and 2.8% nonresident alien students. While the percentage of Mexican Americans taking Scholastic Aptitude Tests (SATs) has increased in recent years, only 7% of all Mexican American 18-year-olds took the SATs in 1983. In 1985, Mexican Americans showed improvements on the SAT in both math and verbal scores.

The majority of Hispanics attend community colleges where the chance of transferring to a four-year college is poor and the completion rate is low. Castillo (1984) notes that attrition is the major problem that contributes to the underrepresentation of Hispanics. Castillo further cites that numerous studies conducted on the transfer function have isolated some specific problems that contribute to the diminishing transfer rate: (a) the poor communication of transfer requirements to students; (b) the lack of information systems for counselors who advise transfer students; (c) the complex admissions and registration procedures to which students are subjected; and (d) the lack of financial assistance--the most frequently cited reason for dropping out. A prevailing trend occurring in community colleges is that their original role of preparing students for transfer to four-year institutions has shifted from transfer to occupational education and technology (Castillo, 1984). Of the Mexican Americans who go on to graduate or professional schools, over half drop out before completing their degrees. Utilizing data from a National Center for Education Statistics enrollment survey, Arce (1982) showed Hispanic underrepresentation is especially severe in the universities, both public and private, in the technical and scientific fields, and in courses leading to the professions of dentistry, medicine, business, and law.

Underrepresentation of Mexican American students in institutions of higher education can be attributed to several factors: low college entrance examination scores, poor writing and speaking skills, content deficiencies, weak study habits, poor self-images, diffused goals, and unsuccessful learning experiences. Although academic preparation lays the foundation for students pursuing a higher education, the process for admission to an institution of higher education includes a series of activities and steps that requires skill and understanding to negotiate. Understanding the process and learning how to manage it are necessary for any college-bound student, but are especially critical for Mexican American students.

However, some intervention strategies aimed at alleviating the underrepresentation of trained Mexican Americans have been established at the secondary and postsecondary levels. For example, pre-collegiate counseling for Hispanics; cooperative projects between high schools and colleges, such as the Pre-Freshman Engineering Program held at the University of Texas at San Antonio each summer and the High Technology High School in San Antonio, Texas; workshops such as the Math Anxiety Weekend Workshop Training held at the Southwestern College in Chula Vista, California; the development of career education curriculum; and various remedial programs at some colleges and universities.

Migrant Education

According to federal legislation, a "migrant" child is "a child who has moved within the past 12 months from one school district to another--or, in a state that is comprised of a single school district, has moved from one school administrative area to another--to enable the child, the child's guardian, or a member of the child's immediate family to obtain temporary or seasonal employment in an agricultural or fishing activity" (Federal Register, 1978). "Agricultural activity" refers to any activity directly related to: (a) the production or processing of crops, dairy products, poultry, or livestock for initial commercial sale or as a principal means of personal subsistence; (b) the cultivation or harvesting of trees; or (c) fish farms. "Fishing activity" means any activity directly related to the catching or processing of fish or shellfish for initial commercial sale or as a principal means of personal subsistence.

A migrant child can be classified as: (a) currently interstate agricultural; (b) intrastate migratory agricultural; (c) former migratory agricultural; (d) currently interstate migratory fisher; (e) intrastate migratory fisher; or (f) former migratory fisher. Migrant students identified as "currently interstate agricultural or migratory fisher" are those students who have moved with a parent or guardian within the past 12 months across state boundaries to enable the parent, guardian, or another member of the child's immediate family to obtain temporary or seasonal employment in an agricultural or fishing activity. Migrant students classified as "intrastate migratory agricultural or fisher" are those students who have moved with a parent or guardian within the past 12 months across school district boundaries within the state to enable the parent, guardian, or another member of the child's immediate family to obtain temporary or seasonal employment in an agricultural or fishing activity. Those migrant students labeled "former migratory agricultural or fisher" are those students who have been interstate or intrastate migrants as defined above, but who have ceased to migrate within the past five years and now reside in an area in which a migrant education project is available and have parental approval for enrollment in such a project.

The identified migrant student population has grown throughout the United States in the last 20 years. When the Migrant Education Program was first begun in 1967, there were 80,000 migrant students identified. Today there are approximately 750,000 identified migrant students in 49 states in the United States, the District of Columbia, and Puerto Rico. These migrant students are not typical students since they are not permanent or semi-permanent residents of any school district. As a result of their high transient rate, these students often have serious educational deficiencies, lack continuity in their educational experience, and frequently fail to complete high school.

Retaining Migrant Secondary School Students

Migrant families are unique for, by definition, they live their lives on the move. Because of this, the need for migrant children and youth to get a consistent education often takes second place to the need to make a living. Additionally, these students are faced with the problems of adapting to new schools, classmates, and teachers several times a year. Enrollment procedures are often complex, involving the transfer of partial credits due to incomplete course work.

Measuring dropout rates for migrant students is difficult since a "migrant student" enrolled in the Migrant Student Record Transfer System (MSRTS) may not continously have migrant status. Students cease to be "migrant" if their migrant status expires, thus making longitudinal surveys difficult. In addition, their mobility makes totally accurate counts of migrant students almost impossible.

According to 1980-81 MSRTS enrollment statistics, five times as many migrant students are enrolled in the second grade than in the 12th grade nationwide. Migrant youth have the lowest graduation rate of any student population group identified in the public school system. The graduation rate for migrant students is estimated to be between 10% to 20%. The average dropout rate for the three states with the highest migrant populations (California, Florida, and Texas) exceeds 32.5%. Gilchrist (1983, p. 2) concludes that:

> Although almost three times more migrant students as four years ago are not staying in school until graduation, the current 12th grade class is still only one-quarter the size of the 8th grade class. More than 20% of the students drop out of school each year. Most leave in the 9th and 10th grades.

There is no doubt that migrant students are dropping out, and that even those who do graduate are not continuing their education. Often the conditions in the secondary school system, while adequate for resident students, become detrimental to the success of migrant students. Among the stumbling blocks are: appropriate age/grade placement, credit accrual, required course work, and state minimum competency tests.

Gilchrist (1983) notes that some of the characteristics of migrant students who drop out include: a history of transiency; limited fluency in English; homes where survival is often the primary concern; lack of self-assurance, support, and clarity about goals; older age level than their peers. Nelken and Gallo (1978) isolated financial pressures, poor attendance, lack of family support (as perceived by the students), and low numbers of siblings who had completed high school as factors distinguishing dropouts from graduates. Repeated experiences of frustration, failure, and a lack of acceptance due to mobility have produced low self-concept, feelings of isolation, and reduced motivation.

Many migrant programs throughout the country have developed various solutions to meet the needs of secondary school migrant youth. Recently several states have increased funding for migrant programs at the secondary level. This increased state support has assisted in the promotion and acceptance of migrant education programs by individual school districts. Many regional and statewide programs have also improved their services to high school students by initiating and supporting secondary migrant education study committees; increasing counseling staff at the secondary level; and providing tutorial assistance, summer programs, and adult education evening programs. Among the programs which have been developed to increase the number of migrant students who will eventually graduate from high school are the Portable Assisted Study Sequence (PASS) program, the High School Equivalency Program, the General Education Diploma classes, the Secondary Credit Exchange (SCE) Program, and the Summer Project Assignments. PASS offers prepared curriculum materials for independent correspondence study. SCE provides credit accrual opportunities for migrant students. In the Summer Project Assignments program, Texas educators travel to receiving states to help organize programs, enroll students, monitor course work, and provide continuity in the areas of personal and family support. Advocacy activities at the national level by the National Association of State Directors of Migrant Education have also served to increase public awareness of migrant programs for secondary school migrant students.

Health Needs of Migrant Families

One of the major continuing concerns of migrant educators is the health of migrant workers and their families. The lifestyle of migrants is characterized by frequent moves, substandard housing, inadequate plumbing, and limited access to quality medical and dental services. Migrant workers toil in all kinds of weather and environmental conditions and are exposed to pesticides and other chemicals used to treat agricultural crops. Chronic medical problems associated with agricultural chemicals and unsatisfactory environmental conditions are common among some migrant families. Frequent changes of residence deprive migrant children of health care and follow-up. As a result, the health problems may lead to difficulties in school.

In addition to the typical diseases and health problems of childhood, migrant children confront numerous health problems and risks associated with their migratory lifestyle and the environmental hazards associated with agricultural work. These children also confront numerous social, cultural, and language barriers which often preclude their ability to access regular, comprehensive health care. Maximum educational achievement may be hindered by undiagnosed and untreated health problems. For instance, the young migrant child with undiagnosed hearing or vision problems will obviously experience learning difficulties, regardless of the quality of the educational program. Other less obvious but equally significant undetected health conditions such as anemia, respiratory infections, and dental disease also contribute to listlessness and distraction due to pain, and may inhibit the education process. The most common problems migrants experience fall within respiratory and digestive system ailments, accidents, skin diseases, infectious diseases, parasitic diseases, nutritional and metabolic problems, nervous system and sense organ problems, and circulatory system problems.

The importance of good health in helping migrant students to achieve their maximum educational potential has been recognized and addressed at both the federal and state levels. Federal legislation defines the eligibility of the migrant child and allows for the provision of supplemental health and support services to eligible migrant children. The *Federal Register* of April 3, 1980, Section 116d.51, states that the state educational agency may provide health, nutritional, social, or other supporting services with migrant education funds if these services are necessary to enable eligible migrant children to participate effectively in instructional services.

However, the provision of such services is often hindered by various problems, such as finding access to low-cost quality medical care, getting health education information in the appropriate language, and keeping accurate medical records after health care is given. Migrant students have also been prevented from obtaining necessary health services by such factors as excessive mobility of their families; lack of bilingual health care personnel; limited knowledge of available health services; residency requirements for eligibility to receive health services; lack of health insurance for farmworker families; high cost of medical/dental care; residence in medically under-served areas; and lack of awareness of preventative health measures. Slesinger (1979) ranked the most common barriers migrants experience in seeking health care as: the time it takes to get an appointment, distance to the facility, language barriers, the times the facilities are open, the cost of services, loss of income, feelings of being uncomfortable with the doctor, lack of knowledge of whom to go to, and fear of what the doctor might find.

In an attempt to respond to this problem, the Migrant Education Program provides physical and dental screenings for migrant students enrolled in a migrant program. In addition to the child's educational history, the Migrant Student Record Transfer System (MSRTS) provides health profiles of these students. Upon enrollment in a new school, the child's health data, e.g., physical exam results, inoculations, dental services, and any other health information unique to the child, are provided. This collaboration between the health and education entities removes the possibility of providing unneeded health services to the migrant child while it brings to the attention of school personnel any critical problems the child has that may affect his/her learning capabilities. Project HAPPIER (Health Awareness Patterns Preventing Illnesses and Encouraging Responsibility), funded through the U. S. Department of Education discretionary funds, attempts to coordinate intra/interstate and intra/interagency efforts to disseminate curriculum units on health promotion/disease prevention for migrant children. Special community health centers have also been established for migrant families in some parts of the country. An interagency agreement between the Office of Migrant Education and the Environmental Protection Agency has been made to offer information and assistance to migrant health centers regarding suspected or confirmed pesticide poisonings. The National Migrant Referral Project has developed referral systems to assist migrant health centers and other health providers in delivering continuous health services to this mobile population. These systems enable the exchange of medical information between home-base and receiving-base migrant health centers.

Outdoor Education

Outdoor education is education in, about, and for the out-of-doors. This definition tells where the learning takes place, the topic to be taught, and the purpose of the activity.

"In" implies that outdoor education can occur in any outdoor setting, from a school yard in an industrial neighborhood to a remote wilderness setting. It can occur in swamps, meadows, forests, shores, lakes, prairies, deserts, estuaries, and all other biomes.

"About" indicates that the topic is the outdoors itself and the cultural aspects related to the natural environment. One may learn about mathematics, biology, geology, communications, history, political science, art, physical skills, or endurance through the context of the outdoors.

The subject matter of outdoor education is a holistic combination of the interrelationships of all nature and human beings, attitudes for caring for the universe, and skills for utilizing natural resources for human survival and for leisure pursuits.

"For" would imply that the purpose of outdoor education is related to implementing cognitive, psycho-motor, and affective domains of learning for the sake of the ecosystem itself. It means understanding, using, and appreciating the natural resources for their perpetuation.

Outdoor Education for Special Populations

A more specialized focus of outdoor education is as a means of utilizing the uniqueness of the environment to address the specific educational needs of certain special populations--the handicapped, gifted, juvenile offenders, and ethnic minority groups. This section will examine outdoor education and the handicapped student.

Outdoor education programming for special populations had its real start in the 1950s and has since grown. Outdoor education can provide benefits for handicapped students regardless of the type or severity of the handicap if the instruction is appropriately designed to meet the learner's unique needs.

Brannan (1981) cites the following benefits of outdoor education for handicapped students. These benefits, in fact, apply to all students, handicapped or nonhandicapped.

1. The outdoors enables youngsters to participate in a "total" learning experience. Day-trips and residential outdoor education programs afford a fuller range of "true-life" learning opportunities not attainable in the typical school setting.

2. The natural environment provides opportunities to pursue learning related to all areas of the school's curriculum (i.e., math, reading, physical education) and to directly apply skills and concepts in order to solve daily life problems that appear in the outdoors.

3. Generalization and transfer of learning are facilitated, because students apply learning to different settings under different conditions and have the added incentive of using their knowledge and skills to solve "real life" problems encountered in the outdoor setting.

4. The outdoors can help develop skills of lifetime usefulness (i.e., self-directed behavior, problem-solving behavior, observation skills, inquisitiveness).

5. Social development is increased through interdependence and interaction with peers and adults. Trust relationships with others are furthered; positive interpersonal relationships are formed (child-child, child-teacher, teacher-child).

6. Opportunities for interaction with the natural environment are limitless and flexible according to the individual's interest and ability level.

7. The variety and highly stimulating effect of outdoor activities are incentives that motivate persons to employ independent and self-initiated behaviors in order to interact with their environment.

8. Outdoor education offers innumerable opportunities for employing a complete sensory approach (i.e., tactile, olfactory) when investigating and learning about one's environment.

9. The outdoors is inherently motivating and therapeutic because of the fun and adventure associated with experiencing the natural environment.

10. Exposure to the outdoors captures children's inherent interest in nature and provides the logical setting for developing awareness, sensitivity, and appreciation of their natural environment.

11. Youngsters are able to "open-up" and express their individual selves through the more informal and relaxed atmosphere unique to the outdoors.

12. Outdoor education enables handicapped youngsters to participate in a variety of activities and settings that have important potential for recreation and leisure (i.e., camping, games, swimming, hiking, historical sites, fishing).

Several innovative outdoor education programs and centers include handicapped students in their program curriculum. Some examples given by Cassidy (1982) are the following:

Bradford Woods Outdoor Education, Recreation, and Camping Center (Indiana)
Camp Confidence (Minnesota)
Colorado Outdoor Education Center for the Handicapped (Colorado)
Santa Fe Mountain Center (New Mexico)
Nassau BOCES Outdoor and Environmental Education Center (New York)

Rural Education and Small Schools

Because of the diverse nature of rural America it does not lend itself to an easily defined taxonomy of rural education. However, it is important to note that nearly two-thirds of the 15,600 public school districts are located in rural areas, and that approximately one-third of the nation's student body attend rural and small schools (REA News, 1982). These impressive figures support the position that the issues and challenges facing rural education, while in many cases different, are no less important than those educational issues facing urban America.

Increased Awareness and Interest in Rural Education

During the past few years there has been a definite increase in the level of interest in rural education. This is reflected at the federal level by the formation of the Department of Education's Intra-Departmental Committee on Rural Education. At the state and local levels, there has been an explosion of centers, agencies, and organizations that focus wholly or in part on the issues of rural education and small schools. The Rural Education Association, for example, has experienced a 50% increase in membership in the last five years. A half dozen new university rural education/small school centers have been established in the last year.

Based on a recent survey carried out by the ERIC Clearinghouse on Rural Education and Small Schools (CRESS), the number of organizations and programs with a major emphasis on rural education and small schools has more than doubled since the last ERIC/CRESS survey in 1983.

Of the 82 organizations and programs in the survey, 60% (49) have been initiated since 1980. Of the 10 state programs, only 2 existed prior to 1983. Only 10 of the 17 university-based programs existed before 1980. The oldest organization is the Rural Education Association, which was established in 1907. Three national organizations, three state organizations, four state programs, and two university-based programs were initiated in 1985.

The three new national organizations include the Consortium of Higher Education Rural Program Administrators, the Rural District Forum of the National School Boards Association, and the National Rural Teacher Education Association. The Arizona Small and Rural School Association, Colorado Association for Rural Education, and the Minnesota Rural Education Association constitute the new state professional organizations. New state programs include the Nevada Department of Education's liaison agreement with the Nevada Rural School District Alliance and the New Jersey State Department of Education's Rural Initiative Committee. North Dakota's Department of Public Instruction has a newly appointed Coordinator of Small and Rural Schools, while the Oklahoma State Department of Education has recently created an Office of Rural Education. Finally, in 1985 Central Missouri State University and Francis Marion College established centers for rural and small schools.

While only 15 programs, or 18% of the entries, represent national organizations or programs, grassroots strength is shown in the state and university activities which account for 70% (57) of the entries.

Research in Rural Education

The new interest and attitudes among rural educators regarding research are most encouraging trends. Leaders in the field of rural education are now saying that any efforts towards improving the quality of education in rural and small schools must be based on documented, sound educational practice and applied research findings.

While, as Stephens (1985) points out, the existing research on rural education is rather meager and tends to lack sophistication the two major national rural education professional organizations have recently come forth with research agendas. The National Rural Development Institute surveyed 461 rural educators while the Rural Education Association surveyed 20 members of its executive and research committees to determine research priorities in rural education (Helge, 1985; Barker & Stephens, 1985). Both studies agreed upon a number of research themes including:

- Rural school effectiveness
- Rural school finance
- Use of advanced technologies for instruction and administration
- Personnel recruitment and retention
- Rural school and community interaction

Other Important Rural and Small School Issues

There exists an ever-increasing demand from rural educators for information on educational technology and how it can be adapted to meet the needs of rural and small schools. The type of technology and the way it is utilized in large urban school districts cannot automatically be assumed to be appropriate for rural schools. While rural educators all over the country are discovering the potential for utilizing educational technology in the areas of educational management and direct instruction, they are also demanding to know which technologies are most appropriate for rural schools.

Finally, consolidation is a much debated issue. Barker and Stephens (1985) point out the need for serious investigations into the effects of consolidation on rural schools and communities, as well as the need to be able to identify accurately when consolidation is an appropriate option, and when to explore alternatives to consolidation such as multiple district superintendencies and collaborative arrangements between school districts.

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PERSISTENT PROBLEMS IN PRECOLLEGE MATHEMATICS, SCIENCE, AND ENVIRONMENTAL EDUCATION: ISSUES, TRENDS, AND RECOMMENDATIONS

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We are currently living in a world and a nation that have changed substantially during the past 30 years. Major changes have taken place in our society and culture, and the societies and cultures of many other nations of the world.

The events of the past 30 years have created what has been called an emerging post-industrial society, an information age, and a period of historic economic transition. The conditions creating these changes are based, in part, on the amount of information available, new technologies for processing and using knowledge, and a marked decrease in time between scientific discoveries and their widespread application.

There have also been substantial changes in the scientific enterprise. The boundaries between science and technology have become less distinct; in many cases, science and technology have become integrated systems for research and development. Scientific research has become increasingly problem-oriented, rather than discipline-oriented. Much of the research at the cutting edge of science involves people from several disciplines and has led to the development of new sciences. Societies are increasingly looking for benefits from science in addition to basic knowledge; people are concerned with the improvement of the quality of life and the reduction of human problems and suffering.

Science is also having an increased impact on society. As societies place increased emphasis on the use of science and technology for improving the quality of life, important values and ethics emerge that relate to decision-making regarding how science and technology should be used in attempts to improve the quality of life. As scientific knowledge is transformed into technological applications at an increasingly rapid rate, impacts on the agricultural, industrial, and service sectors of the world's economy are extensive. The social and economic changes now set off from these impacts are profound and far-reaching.

Needs have also been changing related to mathematics. With major changes in business, industry, and technology, different mathematical knowledge and skills are needed. Much of the mathematics frequently taught in the elementary school can be done with calculators and computers. New technologies and problems to be solved now require mathematical knowledge and mathematical skills that are not included or not emphasized in the precollege curriculum.

Problems related to the environment and the natural resource base continue to confront society. Air, water, and land pollution problems are featured daily in our newspapers, magazines, and television programming. Use and management of resources continue to be major national and international issues. Many personal and societal decisions are being made and need to be made related to these topics; substantial information is required by citizens if these decisions are to be made wisely.

Our current understanding of how children learn, how curriculum and instructional materials can be organized, and how teachers can provide more effective instruction makes us capable of producing important reforms of educational programs and practices. Implementation of this information should modify our choice of content for the curriculum, the design and structure of instructional materials, the use of instructional materials, instructional strategies used by teachers, learning strategies used by children, and evaluation purposes and procedures. We have the opportunity to make progress in developing solutions to several persistent, continuing problems in science, mathematics, and environmental education.

This chapter considers issues, trends, and recent activities in science, mathematics, and environmental education related to (a) achievement, (b) curriculum, enrollments, and instructional materials, (c) instruction, and (d) teacher quality, supply, and demand. In addition, recommendations for needed action are identified.

Achievement

Data obtained from a variety of studies by individuals, states, national groups, and international groups indicate that students are not learning knowledge, concepts, skills, and processes as well as desired. In addition, international comparisons indicate that a large majority of American students do not score well on achievement tests in science and mathematics compared to students in other countries. While there have been some increases in test scores in recent years, the gains have not been large. Scores for able students (especially those planning to go into science and mathematics careers) have remained more stable. Some indicators have shown these students to be making gains. Achievement scores for blacks and minorities have shown improvement, especially in lower grades, but still lag behind those for white students. Scores for females are lower than for males by the time they graduate from high school.

Data have indicated an upward trend in mathematics achievement during the 1980s, but results are mixed, both on topics tested and achievement by students from different geographical areas. Test data indicate that students generally score well on computation, especially whole numbers, and low on problem-solving, applications, and problems involving more complex mathematical skills. Many students also do not master the use of fractions and decimals and do not understand concepts related to measurement, especially metrics and geometry.

Tests administered by various states and professional groups do not show student achievement patterns or achievement gains that are similar across geographical areas. Achievement varies substantially from state to state and within many states. Progress being made to improve achievement also shows substantial variation.

These student achievement patterns on mathematical topics and across geographical areas are not new. Data analyzed for the past 30 years indicate similar patterns. Reasons for these trends, some effective intervention approaches, and recommendations for future action are presented in following sections.

Science achievement scores show mixed results, depending on the instruments analyzed. In general, elementary level students have shown slight gains in recent tests, while most secondary school students have shown declines, though students planning to major in science or mathematics have generally shown stable scores or slight increases. Student scores in science have consistently indicated lowest achievement on items related to physical sciences, problem-solving, and applications. Some tests have shown recent declines on earth science and integrated science topics.

Comparisons of student science achievement patterns across geographical areas show differences, as in mathematics. While fewer data are available for making comparisons in science, achievement materials analyzed indicate substantial differences from state to state and within most states. Progress being made to improve achievement also shows substantial variation.

As in mathmatics, these achievement patterns are not new. Science achievement patterns have indicated similar results for many years. Reasons for these trends, some effective intervention approaches, and recommendations for future action are presented in following sections.

Students frequently develop misconceptions related to science and mathematics that are not corrected by current instruction and instructional materials. The same errors tend to be made at several different grade levels and, in some cases, persist through high school. These misconceptions frequently interfere with later learning and with effective problem-solving. Research is being conducted to identify some key misconceptions and to design intervention strategies; some useful suggestions for modification of curriculum, instructional materials, and instruction are now available.

Many students become less positive in their attitudes and interests toward science and mathematics as they progress through school; by grade eight students frequently rate science and mathematics among their least favorite school subjects. Elementary and high school students also frequently rate the two subject areas among the most difficult subjects they study. Academic success generally correlates significantly with positive attitudes and interests. Instruction that leads to student success, hands-on activity or "doing" activities, and working with other students and is conducted by an energetic, interested teacher is frequently associated with students who have more positive attitudes and interests toward mathematics and science.

While the data are limited, it has been found that student knowledge and understanding of many concepts related to the environment are not strong. Items included on National Assessment of Education Progress (NAEP) tests and other tests indicate that students do not understand concepts such as those related to pollution, biological cycles, population issues, and natural resources (including energy sources). The low knowledge level that many students possess makes it difficult for them as students (and later as adults) to make rational personal and societal decisions regarding the environment.

A number of variables that relate to low and high achievement in all three areas have been identified through research and will be considered. Some schools are using interventions including these variables; in other cases more research, development, and implementation activities are needed to move the research into practice.

Some caution needs to be used in analyzing test data. Comparisons of tests and textbooks/curricula indicate a substantial discrepancy between many of the textbooks/curricula and the content and the emphases of many of the tests. Comparisons of tests with classroom instruction also indicate substantial differences between what occurs in the classroom and the content and emphases of many of the tests. The tests are not measuring all that has been learned; hence, the contents of tests used for evaluation and research should be examined to be certain that what is being measured is the knowledge, skills, attitudes, and values that are believed to be important.

Curriculum, Instructional Materials, and Enrollments

Among the strongest variables related to student achievement are: (a) amount of focused time and use of time for desired learning; and (b) the extent to which the desired learning is emphasized in different years. Therefore, the curriculum, instructional materials, and student enrollment in courses should be a major focus of efforts to improve science, mathematics, and environmental learning.

Curriculum and Instructional Materials

Reports from inside and outside the education community agree that substantial changes should be made in both the curriculum and instructional materials to reflect current and future personal and societal needs, new technologies, and recent research on learning.

There is general consensus that the curricula in all three areas, but especially in the fields of mathematics and science, do not reflect our current society and societal needs, do not provide the content needed for current and future academic and personal needs, do not reflect our knowledge of learning and instruction, and are not considered relevant by many students.

Since a textbook is the primary tool in instruction for most mathematics, science, and environmental education teachers, there is substantial concern that materials be available to implement needed curriculum changes. Recommendations are unlikely to be implemented without appropriate instructional materials for the teachers to use.

Data indicate that materials with different content, content organization, skill emphasis, psychological order, and format have different impacts on student achievement.

Mathematics--Curriculum

Many people continue to be concerned about the mismatch between the way arithmetic is taught in school and the way it is used in real life, the over-emphasis of time on skills that are now learned best (for example, computation and recognition), lack of application and problem-solving experiences, lack of time for topics and experiences that people believe should be in the curriculum, lack of use of cognitive research for determining order and procedures for teaching concepts and skills, and a fragmented secondary school curriculum. The National Council of Teachers of Mathematics and other groups have taken the initiative to change these conditions.

The need to redevelop curricula to reflect the changing needs of society and to incorporate the new techniques and processes made possible by computers and calculators has led to a number of wide-scale funded projects, as well as to state and local efforts. The development of numeracy--an understanding of mathematics and mathematical procedures--seems imperative, and the need for restructuring of traditional secondary school courses is evident. Such courses should include but not be limited to algebra, geometry, and general mathematics, so that technology is used as a vehicle of instruction rather than an end in itself. Modifying the content of elementary school mathematics programs is also a goal of curriculum development efforts. Decreasing the emphasis on computation while increasing the emphasis on estimation, probability and statistics, geometry, and other vital but neglected topics is being stressed. Developing understanding as well as skill with fractions, decimals, and other number ideas is similarly needed. Increased emphasis is being given to the need for more stress on problem-solving and applications in specific situations to improve problem-solving and knowledge use and transfer. Research information on cognitive learning can provide suggestions for ways to organize and to structure the curriculum.

Mathematics--Instructional Materials

"Instructional" materials in mathematics conjures up the image of a vast array of material devices and other articles to aid in teaching mathematics: blocks, the abacus, Cuisenaire rods, chip trading games, spinners, as well as calculators and computers. Reality, however, is something else; textbooks and tests predominate. The use of nontextbook materials is the highest in first grade and the percentage of use generally decreases as the grade level increases.

The evidence on the value of the use of manipulative materials is very clear: they have a high probability of increasing achievement and appear to be essential in providing a firm foundation for developing mathematical ideas. Many studies provide at least partial support for the use of materials in stages progressing from concrete to pictorial to abstract or to symbolic. The use of either or both physical and pictorial aids results in significantly higher achievement than when only symbols are used. Correct use of objects and materials is also important.

There is little doubt that textbooks and tests shape the curriculum. However, analyses of textbooks and tests indicate substantial diversity among textbooks, among tests, and between textbooks and tests. Emphasis on concepts and skills recommended by various associations and groups differs substantially among texts and tests.

Use of calculators and computers is increasing, but the number of classrooms in which either or both are being used an adequate amount of time is low. Data from more than 100 studies involving the use of calculators strongly supports their use for saving class time and student time, increasing achievement, and improving student attitudes toward mathematics and the student's self-concept with respect to mathematics. Computers can also provide instructional benefits; mathematics teachers need to incorporate computer applications more meaningfully into mathematics instruction.

Mathematics--Time

Among the strongest variables related to mathematics achievement are (a) amount of time devoted to the objectives of instruction, (b) number of courses in mathematics a student has completed, (c) use of the concept or skill in applications and problem-solving, and (d) recency of the instruction related to the objective.

Providing more time in the elementary school curriculum can probably be accomplished best by a reduction in paper and pencil computation and the increased use of hand-held calculators. This would also have an impact on the sequence of instruction, approaches used in teaching, and content selected for inclusion in the curriculum.

Time devoted to application and problem-solving experiences is substantially less than what is required to develop effective skills and understandings. Time can most likely be obtained at lower grade levels by using tools such as the calculator and by modification of what is taught. Time can be gained at the secondary level by using calculators and computers and modifying the curriculum. Modifying the curriculum for secondary school students should include developing courses for all students and developing special courses for college-bound students planning to major in engineering, mathematics, and the natural sciences. Data indicate that the average graduate from high school has completed between two and three years of high school mathematics (out of four years). While about 70% of students pursuing academic programs have completed three years of mathematics, less than 30% of the general and vocational students have completed three years. These data suggest that requiring more courses without modifying the curriculum will not provide appropriate mathematics experiences for either group of students.

Science--Curriculum

While there is substantial debate regarding the desired curriculum for science, consensus is developing that the science curriculum needs to be modified to (a) include more emphasis on problem-solving, decision-making, applications, technology, societal issues, and the physical sciences; (b) reflect current understanding of the nature of the learner and of learning; (c) increase the amount of time available for instruction; (d) provide appropriate experiences and courses for all students; (e) increase the use of technology; and (f) reduce the breadth of content to allow for more depth.

The current curriculum in most schools does not reflect these directions; however, activities at national, state, and local levels are evident. The American Association for the Advancement of Science, the National Science Teachers Association, several state departments of education, and the National Science Foundation are among groups leading in efforts to modify the curriculum.

Major efforts to date have focused on increasing the emphasis on technology and societal issues in the curriculum, increasing the amount of science required in the curriculum for college-bound students and some other students, increasing the emphasis on problem-solving and applications, and increasing the use of technology. Several state and local curricula reflect these emphases, and others are following.

There have been conferences to consider more fundamental changes in the curriculum. Recommendations have been made by various groups, and work is underway to study and to implement some of the proposed changes.

Science--Instructional Materials

Science instruction can involve many materials, as in mathematics; however, reality in science is the same as in mathematics--textbooks and tests predominate. The use of nontextbook materials appears to be the highest in lower elementary grades and upper secondary grades.

The evidence for the value of the use of manipulative materials in science is similar to the findings reported for mathematics. Activity-oriented programs that use manipulative material are generally more successful in promoting student achievement in the use of science process skills, creativity, and higher cognitive skills. Proper/effective use of materials is also important in science. Cognitive learning research has provided a number of suggestions for the order of using materials and the ways of using materials. Most practice clearly does not reflect available research.

Textbooks and tests become the curriculum for most schools. As in mathematics, there is substantial diversity among textbooks, among tests, and between textbooks and tests. Emphases on concepts, skills, attitudes, and values recommended by various professional associations and groups differ among texts and tests. The impact of cognitive learning research on science textbooks has been minimal. Articulation between textbooks, even within some series, is not strong; articulation between secondary science courses frequently does not exist. While there have been recent conferences involving various stakeholders on ways to correct these and other concerns related to textbooks and courses, major efforts are in the discussion, planning, and pilot stages. Recent and current research regarding use of materials has the potential for guiding substantial change in the development and use of materials.

Science--Time

Among the strong variables related to science achievement are (a) amount of emphasis devoted to the objectives of instruction, (b) the number of courses in science a student has completed, and (c) recency of the instruction related to the objective.

Providing more time for science in the lower elementary school curriculum can probably be accomplished best by integrating science experiences with other activities such as writing, reading, art, physical education, and health. In the upper elementary grades and many middle schools, more time would clearly help to achieve desired objectives; modification of the curriculum, however, could make the curriculum more efficient and effective. Data indicate that about 50% of graduating high school students take no science after grade 10 and no physical science after grade 9. Increased time is being obtained by requiring students to take more science courses; these requirements raise the question of what science students should take. Modification of the secondary school curriculum is clearly needed if these courses are to be appropriate.

Some time can be gained by use of technology and simulations in science laboratory acitivities to allow more time for problem-solving and decision-making experiences; research consistently shows that most science instruction is not successful in achieving these goals at desired levels.

Environment--Curriculum

Environmental education has found no discrete place in the curricula of most schools, but elements of it (ranging from classical "nature study" through outdoor education and traditional conservation education) continue to exist in many localities. Current emphases in environmental education focus on interactions between and among science, society, technology, and environment, calling for input from the natural sciences, the social sciences, and the humanities, but these are not yet generally implemented. The major difficulty continues to be finding a place for interdisciplinary instruction within school organizational patterns which are in large part along disciplinary lines, at least in departmentalized secondary schools. In the case of self-contained elementary classrooms, a lack of teacher education in the interrelationships among science, society, technology, and environment, and in the pertinent basic content areas themselves, remains a practical problem.

Environment--Instructional Materials

There are few if any textbooks, at any grade level, which deal with science-technology-society-environment interrelationships, as well as a corresponding deficiency in numbers of texts in the more traditional aspects of environmental education--nature study, outdoor education, conservation education. The environmental education community has, however, developed and made available a number of teacher-oriented guides and modular-type instructional materials, with the expectation that they can and will be inserted into existing curricula in many areas, particularly the sciences and social studies, as appropriate. These materials range from traditional areas to the more modern ones. These modular materials are being used for instruction primarily by science and social science teachers. The materials also are being used for curriculum development by science educators who want to increase the amount and focus of material in the curriculum on science-technology-society.

Environment--Time

As implied above, the general pattern for time spent in instruction in environment-related areas is minimal. As a generalization, few schools teach "environment" as a discrete area; such a situation is likely to arise only in the case of the elementary teacher who has a particular interest, or of the secondary teacher (usually of science, less frequently of social studies, and rarely of other disciplines) who has a particular interest and a local opportunity.

However, the inclusion of environmental topics, such as in courses related to science-society-technology, is an expanding area. Many of the societal concerns inherent in science-technology-society considerations are in fact environment-based and/or contingent on environmental considerations. Thus, the growing thrust to emphasize "environment" in such courses is increasingly evident.

Instruction and Classroom Climate

During the past 20 years there has been an increased amount of research related to classroom instruction and learning. In addition, many of these studies have been reviewed and synthesized to provide strategies for the application of research to practice. From this research, variables related to increased learning and achievement have been identified.

Among the strategies and variables that have been related to increased achievement are: (a) homework assignments; (b) low absenteeism; (c) corrective measures for errors in learning; (d) high teacher expectations; (e) teachers' confidence that they can help students; (f) academic time; (g) engaged time; (h) classroom organization; (i) feedback on learning; (j) questioning techniques; (k) mastery learning; (l) congruence of instructional materials, instruction, and evaluation; (m) wait time; (n) cooperative learning techniques; and (o) procedures to help students construct knowledge and to eliminate misconceptions.

There is a developing consensus that recent research efforts provide knowledge about teaching and learning that can make a substantial impact on instruction. Some of the information is currently being applied; further work is needed to translate more of the information so that it can be used in practice and to determine effective combinations of variables to use.

While most of the recent and current instructional improvement efforts have been at the elementary school level, secondary school students and programs are being included.

The Effective Schools research provides directions for school building and classroom practices that can help to improve student achievement. Data from over 100 studies and reports indicate that staff who incorporate the recommended practices into their school programs can usually expect to obtain higher student achievement. The extent of the gains appears to be related to (a) the extent to which the recommended practices are implemented; (b) the congruence among the goals, instruction, instructional materials, and evaluation; and (c) the amount and quality of time devoted to the assessed objectives. References to these studies are included in two publications in the "References" on effective/successful schools (Howe & Butts, 1986 and Kyle, 1985) and the publication Research within reach: Science education (Holdzkom & Lutz, 1985).

Meta-analysis studies and other secondary analysis efforts have yielded extremely useful data regarding instructional strategies, the amount of gain obtained by use of a specific strategy or combinations of strategies, and the percentage of studies in which positive gains were obtained by experimental groups. Observations of a large number of mathematics and science classrooms and reviews of research studies indicate that many of these practices are not being used or, if they are being used, they are not being used in effective ways. Effective use of appropriate combinations of these strategies should produce significant achievement gains for most teachers.

Recent research has developed a better understanding of how students construct knowledge and develop or change misconceptions. While this is still an emerging research area, knowledge has been gained that is useful for modifying many current instructional practices. Learners develop conceptual frameworks or models that depend on understanding specific subject matter; if the subject matter is not understood, then the student will likely develop some misconceptions. Research data indicate the importance of teaching to reduce misconceptions at the elementary school level so that students learn reasonably correct concepts and models. Very few schools are doing much to teach students how to learn and to help them avoid misconceptions and correct those that they have.

A change in emphasis and modification of many preservice and inservice programs is clearly needed if schools are to implement the data identified in this section. Most teachers are not aware of current information and procedures to use to implement the instructional approaches.

Teacher Quality, Supply, and Demand

Developing and maintaining a sufficient number of qualified teachers has been another persistent problem.

The amount of science and mathematics course work taken by elementary school teachers has not changed appreciably during the past 25 years; most have had three or fewer courses in science and two courses or fewer in mathematics as undergraduates. Few elementary teachers have taken additional coursework in science or mathematics after graduation. Very few elementary teachers have taken college courses that emphasize environmental problems.

The preservice preparation of most primary grade elementary school teachers is not likely to change substantially in terms of credit courses in science or instructional procedures for teaching science. While preservice programs for these teachers should focus on our current knowledge of instruction and knowledge of science, inservice education programs need to carry the burden of helping primary grade teachers.

Many schools are again looking for science specialists for upper elementary grades and middle schools. Programs have been developed by some institutions to provide for the needs of these teachers and other institutions are in the process of developing such programs. The National Science Foundation plans to support several model programs for the preparation of teachers at the middle school level.

Very few states have had a sufficient number of well prepared chemistry and physics teachers, middle school or junior high science and mathematics teachers, or earth science teachers during the past 20 years. The teacher shortage has usually been in areas of rapid population growth, inner cities, and rural areas, and continues to be primarily in these areas at this time.

Developing and maintaining a supply of qualified teachers has become more severe as other vocations have attracted women, an increasing salary differential has developed between teaching and other careers requiring similar preparation, the work place has been viewed as less than desirable, and teacher status has decreased. Attracting people (both men and women) to the teaching profession and getting teachers who have left the classroom to return has become more difficult.

Among the solutions being proposed and tried in order to retain and to recruit teachers are: (a) increasing all teacher salaries; (b) providing differential pay for teachers in shortage areas (geographic) or content areas (subject); (c) developing merit pay programs; (d) developing career ladder programs; (e) providing modified work schedules for teachers; (f) providing increased recognition for competence in teaching; (g) assigning teachers outside their regular teaching fields to teach mathematics or science; (h) waiving certification requirements for teaching; (i) developing special programs for preparing teachers in shortage areas; (j) developing forgivable loan programs for people who prepare to be teachers and teach in a specific state; (k) improving the working conditions in schools; and (l) improving the image of the teacher in the community.

Articles have been written by proponents of and by detractors from various programs on philosophical as well as perceived or real operational problems. Some relevant research has been reported, but the results of specific efforts are difficult to assess at this time since very few programs have been in operation for a substantial time and, in many cases, combinations of solutions are being used. Data available indicate that few simple solutions will attract a sufficient number of well-prepared teachers. Those states and communities that are having success in reducing teacher shortages and maintaining or increasing the quality of the teaching staff are using several approaches. It is also evident that some solutions such as loans, improved school climate, and teacher recogntion require time before they have an impact on staffing.

These actions to recruit, retain, and reassign people are taking place at the same time that many educators believe our capability of developing more effective teachers has increased. The growing knowledge base regarding useful content knowledge, pedagogical knowledge, and effective instructional skills has again raised questions regarding the kind of education and training a teacher should receive. Efforts are currently underway in several states, colleges and universities, and communities to design preservice and inservice programs that build on existing knowledge.

Preservice and inservice programs need to consider what subject matter, content knowlege, and competence teachers need to have, and not what science courses a teacher should have or the requisite number of hours in science. These programs also need to focus on instruction that is useful for achieving specific objectives and the probable impact of the use of alternative procedures and strategies on pupil achievement and attitudes.

Programs also need to be developed to help prospective teachers and inservice teachers understand how knowledge is constructed by the learner so that they can become better self-learners and can be more effective and efficient in selecting content, designing instruction, and evaluating student learning.

Priorities for Action

If the precollege programs in mathematics, science, and environmental education are to develop students with knowledge, skills, and attitudes that are needed, substantial reform is needed in curriculum, in instructional materials, in teacher education, and in instructional programs. Some needed activities have been identified in previous sections of this chapter.

Most of the major problems identified have been persistent problems in education. Approaches to alleviate these persistent problems will require commitment to long term efforts and willingness to modify past practices in very different ways. There are some activities that deserve priority attention.

Curriculum

There is substantial consensus among a broad public that the curricula in all three areas (science, mathematics, environmental education) has not been well delineated for students' current and future needs. Most current curricula do not reflect the present state of science and mathematics, the "information age," cognitive research on learning and instruction, and the effective use of technology as it relates to the curriculum. Problem-solving, decision-making, and applications are not stressed. Interdisciplinary groups should be established immediately to develop suggested frameworks for consideration by a broader public. These frameworks can provide direction for the other needed activities. Without a good curricular framework, many of the state and local activities will be patches on a worn out tire.

Instructional Materials

Since over 90% of the instruction in the United States in science and mathematics is based on textbooks, modification of instructional materials deserves high priority. Priority should be given to materials for upper elementary grades, middle schools, and courses for senior high school nonscience majors. Reasons for these recommendations are extensive, but a few will be highlighted.

Students begin developing their conceptual understandings, interests, attitudes, values, and skills in the elementary years; many studies have shown students at these age levels are not developing cognitively and achieving as desired. Success for these students is important and materials that will help promote success can be developed. Many students make their decision to take science or mathematics in secondary schools based on their experiences in the upper elementary and middle school years; a large number of students are currently opting not to take these secondary school courses.

Science materials for the nonscience majors are also needed. One of the few widespread reform actions that has been taken in many states has been to increase the number of courses in science or mathematics required for high school graduation or college admission. This action will have little impact on science and mathematics majors; they are already taking the required number of courses. It will have substantial impact on those students going to college who are not majoring in mathematics or science and for those students not going to college. Different courses should be developed for many of these students. Our priorities do not imply that other materials are not needed. Research data, school program development, state regulations, student enrollment patterns, and analyses of existing materials support the strong need for efforts at these priority levels. The National Science Foundation's recent program related to middle schools is beginning action on some of these needs.

Materials developed should reflect the curricular framework established (see curriculum recommendation), be based on available cognitive learning research, be designed to make effective use of available technology (calculators, computers, and so forth), emphasize problem-solving and decision-making, emphasize how to learn, and be activity-oriented.

Teacher Quality and Supply

Action is needed to maintain and to improve the quality of both inservice and preservice teachers. The teacher is usually considered the key to student success. Priority should be given to developing strong inservice programs to provide assistance and instruction directly related to the teachers' instructional responsibilities. Programs should be developed by local schools to meet local needs. State and federal support, however, should be provided on a continuing basis to assure that inservice programs are maintained and to help balance economic differences among communities. Evaluation should be required to identify program impact on students and to improve programs. Developing good inservice programs will have a more immediate effect on improving student achievement, interests, and attitudes than will preservice programs. Inservice programs should also be more efficient and effective than preservice programs since all these teachers are in the schools and teaching; most of them will be in the schools for an additional 7 to 15 years. The future quality of the schools depends to a great extent upon their effectiveness as teachers. Priority should be given to upper elementary and middle schools for inservice activities.

Preservice programs need to be strengthened and recruitment of prospective teachers needs to be expanded for the long-term improvement of pre-college education. Incentives, such as loans that will be cancelled for years of teaching experience, should be established and maintained by all states with teacher shortages. There is evidence that incentives do work if maintained over time.

More competitive teacher salaries are needed to attract people into teaching and to retain teachers in the schools. Improved working conditions are also needed to retain teachers in the schools.

Classroom and School Climate

Research on effective and successful schools indicates substantial improvements in student achievement and teacher morale can be made at reasonable costs by implementing various combinations of school and classroom improvement procedures. These practices should be implemented and considered by other schools when it appears that these procedures will improve the educational program.

Classroom Instruction

Research accumulated over the past several decades provides useful suggestions for ways to change instruction that will generally improve student achievement. Materials should be developed for use with inservice and preservice teachers to show them how to use this information and these procedures in their classes. Inservice programs should then be developed to prepare a cadre of teachers to work with other teachers in trying these procedures.

Impact of Research on Practice

While there are many reasons why research information has not made the desired impact on practice, a major variable is awareness. No practice improvement information and materials can be used if people do not know they exist. Secondly, no practice improvement information and materials will have much impact if they are not in a form that provides sufficient information, materials, and assistance to help school personnel understand the practice. Some programs have been effective in helping schools become aware of information and materials and how to use them. The National Science Foundation programs of the 1960s and early 1970s were effective in getting many schools to become aware of mathematics and science materials and to use them; many of these materials had very positive effects on student achievement, interests, and attitudes. Several U.S. Department of Education programs such as the Educational Resources Information Center (ERIC) and the National Diffusion Network (NDN) have been effective in creating awareness and use of materials. However, these programs have not been sufficiently supported or developed to accomplish the needed tasks. Existing programs should be reviewed, improved, and supported to enable them to assist schools in appropriate ways. Existing school networks need to be used in the effort, and others need to be developed. Programs developed should reflect available technology and research on school improvement.

Federal, State, and Local Commitment to Mathematics, Science, and Environmental Education

Over 100 reports issued during the past five years have indicated there are severe problems and perhaps a "crisis" in pre-college education. Actions taken to date by most people responsible for educational programs do not reflect efforts of magnitude that indicate these persons really believe there are severe problems or that a crisis existed or exists. Leadership is needed at all levels in dealing with the problems that do exist and that have existed for many years. Resolving these problems will take additional resources and a continuing commitment to improvement. Some good activities have been renewed by the National Science Foundation, the U.S. Department of Education, some states, and some local education authorities; these actions, however, are insufficient for the task and do not show long term commitment.

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CORE CONTENT, CRITICAL THINKING, AND CIVIC VALUES: ISSUES ON EDUCATION IN THE SOCIAL STUDIES

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Educational reform has become a major concern of Americans. Numerous national commissions and reports have alerted the public to deficiencies in school programs and needs for improvement in curricula and teaching. Attention has been directed primarily to education in the sciences, mathematics, and English; but the social studies have not been ignored. (In this chapter, social studies is used as a departmental label that refers to subjects in history and the social sciences, which are staples of the secondary school curriculum and sources of content in elementary school courses.)

Public scrutiny and criticism have prompted educators in the social studies (history and the social sciences) to re-examine established curriculum patterns and teaching procedures. Discourse and debate about standards of achievement, quality and uses of textbooks, competence of teachers, and scope and sequence of the curriculum have been highlighted in conferences, journals, newspapers, and television or radio programs. Both USA Today and Theory and Research in Social Education have included articles on trends and issues in the teaching of history and the social sciences in elementary and secondary schools; both CBS and PBS have aired programs on the reform of curricula and teaching, including current arguments about the content of courses in the social studies and the ways these subjects should be taught in the nation's schools.

Old questions and issues on education have aroused new interest among scholars and the general public. What knowledge, cognitive skills, and values should all (or most) students be expected to learn through education in the social studies? How should knowledge, cognitive skills, and values be taught to students of the social studies? How should the social studies contribute to education for citizenship in a free society? This chapter treats these important issues on education in the social studies in terms of three topics: (a) core content, (b) critical thinking, and (c) civic values.

Core Content

The current educational reform movement has stimulated interest in common learning experiences and basic requirements for all students. Reformers of the 1980s have argued for core content, essential subjects that all students should learn. The National Commission on Excellence in Education (1983, pp. 24-27) recommended that all students seeking to graduate from high school be required to complete a curriculum comprised of five "New Basics"--including "three years of social studies"--to acquire knowledge and cognitive skills "required for success in the 'information' age we are entering." In a widely-praised report on secondary education in America, Ernest Boyer said: "A core of common learning is essential. The basic curriculum should be a study of those consequential ideas, experiences, and traditions common to all of us by virtue of our membership in the human family at a particular moment in history" (1983, p. 302).

What core content should all students be expected to learn through education in the social studies? Why should they be expected to learn it? How should it be organized and presented to students?

Boyer and other current curriculum reformers (McNett, 1984) recommend at least three years of study in history and the social sciences as a condition for graduation from high school. All urge substantial courses in American history and government or civics. Most also recommend content on western civilization and nonwestern civilizations either as separate courses or as parts of a course in world history. Many supporters of a high school core curriculum in the social studies urge inclusion of geography and economics either as one-semester courses or as units or major themes within courses in history and government. Nearly all core content advocates agree that knowledge in history, geography, civics, and economics should be essential elements of the elementary and middle school curriculum.

State governments and local school districts across the country have responded to the educational reformers by raising requirements for graduation from high school. More than 40 states have new standards for the social studies in secondary schools. These standards include more required courses and periodic testing of knowledge and related cognitive skills in history, geography, government, and economics (U. S. Department of Education, 1984). Several state education departments have established commissions or task forces to redesign curriculum guides in line with ideas of prominent national commissions and reports about the importance of extensive core content requirements.

Some proponents of core content emphasize broad coverage of information in separate subjects. They want students to survey facts presumably known by an educated person. By contrast, other advocates of core content emphasize conceptual frameworks, and facts subsumed by them, which constitute structures of knowledge in academic disciplines. A concept (the building block in a structure of knowledge) is a category, that includes data or facts that fit a definition of it. We use the definition of a concept as a criterion to organize phenomena with certain common characteristics. Concepts are powerful means to learning, remembering, and thinking about facts. However, intellectual power generated by one concept is increased greatly by connecting it to a framework--a set of interrelated concepts.

The core content of academic disciplines, such as geography or economics, consists of interrelated concepts and the facts that pertain to them. We use these concepts and facts to describe and explain aspects of reality. Academic disciplines are distinguished from other subjects in the curriculum by their conceptual frameworks, which demand sustained, systematic (disciplined) intellectual effort by students who would use them effectively to organize and interpret masses of information. Students of history, for example, learn schemes for periodization--broad categories that subsume sets of lower-level concepts and give order and meaning to facts in a narrative. Educators who emphasize mastery of interrelated concepts in academic disciplines disagree strongly with those who claim that core content consists of relatively formless bodies of facts to be transmitted to students in surveys of separate subjects.

The best new curriculum guides emanating from state education departments, public school districts, and private schools and associations tend to emphasize the basic academic disciplines of history, geography, government (political science), and economics. These curriculum proposals also stress connections of knowledge within and between courses. Interrelated and mutually reinforcing concepts and facts in these basic academic disciplines presumably are generative: they engender subsequent learning.

Proponents of extensive core content requirements claim that general acceptance of their position in schools would:

- Provide all students with equal access to knowledge needed for socioeconomic advancement, democratic participation in public affairs, and personal fulfillment.
- Bring coherence and integrity to curricula that were disordered and overextended during the 1970s through proliferation of new courses and excessive addition of trendy topics to old courses.
- Contribute to social cohesion and national unity among a diverse population of students by providing knowledge of a common American heritage and identity.
- Help students to deal with "information overload" in our "high-tech" society by promoting mastery of conceptual frameworks that subsume or integrate vast amounts of data.
- Lead to large average increases in scores on national and local tests of achievement in history, geography, and civics by distributing widely and equitably basic knowledge about our world in the past and present (McNett, 1984; Sewell, 1984).

Opponents of core content that is anchored in academic disciplines argue that it would have negative effects on students with little interest in or aptitude for intellectual endeavors or preparation for college. They reject the assumption that all students have the need for and ability to profit from extensive and rigorous education in history and the social sciences. They contend that requiring all students to complete an extensive core curriculum, based on academic disciplines, would:

- Restrict opportunities to choose courses that fit particular interests and needs (ASCD Task Force, 1985).

- Create a curriculum imbalance in favor of academic courses at the expense of utilitarian or practical programs with direct social relevance (ASCD Task Force, 1985).

- Frustrate individuals with little or no interest in academic pursuits and cause them to leave school before graduation.

- Deny "authentic intellectual needs of students who differ" by restricting opportunities for social inquiry and stifling interest in the social studies: "If students are to become meaningfully engaged in social inquiry, the curriculum must respond to some extent to unique and unanticipated interests of individual students" (Newmann, 1985, p. 11).

- Limit student perspectives by requiring mastery of certain content in the social studies curriculum without justifiable criteria for selecting it as more worthy than alternative bodies of knowledge (Newmann, 1985).

Clashing opinions on the core content issue are rooted deeply in the 20th century history of curriculum development in the social studies (Hertzberg, 1981). Opponents of extensive core content requirements have represented various positions on the overarching purposes of education--social relevance and utilitiarianism, social criticism and reconstruction, and child-centered teaching and learning (Stanley, 1985). A shared viewpoint of these disparate positions has been antipathy to "subject-centered" curricula and standard requirements for promotion and graduation. Core content opponents have tended to favor interdisciplinary courses of study organized around public issues, social problems, or trendy topics; and they have believed cognitive processes to be more significant educationally than content. Furthermore, they have tended to reject claims that certain subjects are essential in the education of all students (Hertzberg, 1981).

Many educators in history and the social sciences, who have agreed in principle with core content based on academic disciplines, have differed on selection and sequencing of subject matter and means and ends of teaching. Proponents of academic core content have included ahistorical promoters of social science subjects, history enthusiasts with little use for social sciences, academic elitists with slight interest in pedagogy or the needs of average or below-average students, and supporters of general or liberal education for all classes of students, regardless of variations in intellectual ability and background (Keller, 1984; Hertzberg, 1981).

There can be no facile resolution of clashing positions about core content in the social studies. The recent report of the National Council for the Social Studies Task Force on Scope and Sequence (1984) is an instructive example about the complexities and difficulties of reaching agreement on selection and organization of content. After lengthy and careful deliberation, the NCSS Task Force proposed essential goals for education in the social studies and alternative plans for selecting and organizing content.

However, the Task Force report did not settle any critical issues; it served mainly to provoke additional debate among the NCSS membership and to prompt calls for establishment of a new study group or commission to deliberate upon curriculum reform. Given the NCSS Task Force case, the following propositions on core content are offered as stimulators of discourse and investigation, not as conclusive statements.

1. Secondary school courses based on conceptual frameworks (core content) of academic disciplines--history, geography, political science, economics--are keys to acquisition, retention, and effective use of knowledge (Hertzberg, 1981).

2. Strong and extensive emphasis on core content, based on academic disciplines in history and social sciences, is likely to produce significant gains in knowledge among most secondary school students, which they need for academic achievement, socioeconomic advancement, and effective citizenship (McNett, 1984).

3. Interdisciplinary courses on public issues, social problems, or timely topics are not so likely to yield substantial gains in students' knowledge of the past and present. Research on the history of curriculum reform in the social studies shows that this means of selecting and organizing content has tended to produce "a formless curriculum from which students learned little and which bored them" (Hertzberg, 1981, pp. 80-81). Teachers who would integrate knowledge from several disparate subjects and apply it to lessons on issues or topics face complex and unresolved conceptual problems.

4. Acquisition and retention of core content in the social studies by all, or most, students are likely to be facilitated greatly if this content is structured logically within and between subjects from one level to the next, with gradual increases in complexity and standards of achievement that are consistent with the cognitive development and prior learning experiences of students (McNett, 1984; Keller, 1984).

Critical Thinking

Unlike core content, critical thinking, in principle, is not an object of contention among leaders in social studies education. It is endorsed, in the abstract, by advocates of clashing positions on teaching and learning; subject-centered and child-centered educators support critical thinking, as do proponents of education for social reconstruction, civic responsibility, academic integrity, and so forth. They tend to agree that critical thinking is not treated extensively or satisfactorily in most social studies classrooms (Goodlad, 1984; SPAN Project, 1982). However, social studies educators disagree about definitions of critical thinking and purposes and procedures in teaching it to students. What is critical thinking in the social studies? Why should all students learn how to do it? How should it be taught and learned in the social studies?

Definitions of critical thinking vary in breadth or inclusiveness. "Construed broadly, critical thinking comprises the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts" (Sternberg, 1982, p. 46). Some definitions are so inclusive as to equate critical thinking with thinking in general or with all facets of higher level cognition, from application and analysis to synthesis and evaluation. By contrast, narrow definitions specify evaluation as the core of critical thinking. In this view, critical thinking involves formulation and use of criteria to make warranted judgments. For example, critical thinkers in the social studies appraise claims about knowledge, decisions about public policies, and alternative positions about social or political issues. Critical thinkers also evaluate the criteria or standards by which they make judgments.

Critical thinking, whether conceived broadly or narrowly, implies curiosity and skepticism. Cornbleth says (1985, p. 13) that it is "a dynamic process of questioning and reasoning, of raising and pursuing questions about our own and others' claims and conclusions, definitions and evidence, beliefs and actions." However, critical thinking is not synonymous with negativism or iconoclasm. It can lead to affirmation of traditions or conventional wisdom in some instances and to rejection of them in other cases. Neither a conservative nor a liberal bias is built into the processes of critical thinking; rather, these processes (properly employed) can free students from the fetters of ignorance, confusion, and unjustified claims about ideals and reality. Thus, critical thinking in the social studies is compatible with the highest standards of scholarship and citizenship in a democracy.

Educators in the social studies disagree about how to include critical thinking in the curriculum. One position holds that the process of critical thinking is far more important than any body of content to which it might be applied. This view assumes that the same cognitive strategies and skills can be transferred easily to any subject matter. It posits cognitive strategies and skills as the constant and essential elements of a curriculum; by contrast, content would be organized flexibly around social problems, public issues, and current topics, which might vary among students and from semester to semester in the same course. Some advocates of the primacy of cognitive process would go so far as to propose separate courses in critical thinking; the subject matter would vary with student interests. This position clashes sharply with proposals for organization of core content in terms of conceptual frameworks in the academic disciplines of history and the social sciences.

How might a primary emphasis on the process of critical thinking improve education in the social studies? Proponents claim that it would foster development of generalizable strategies and skills that might be transferred pervasively to subjects within and outside of school. These strategies and skills are keys to independent thinking and learning. Furthermore, students would be equipped with enduring intellectual abilities, which could be used long after particular facts had been forgotten. Finally, primary emphasis on cognitive process, instead of content, would provide ample scope for practicing strategies and skills in critical thinking; this scope would be unduly limited if confined to separate subjects in history and the social sciences (Cornbleth, 1985).

There is strong opposition to proposals for an overriding emphasis on cognitive process vis-a-vis subject matter. Opponents claim that strategies and skills of critical thinking and essential elements of particular subject matter are equally important and should be treated in concert. Educators favoring synergistic connections of certain content and critical thinking assume that development of cognitive strategies and skills is very dependent upon particular structures of knowledge. They argue that critical thinking cannot proceed satisfactorily unless the thinker knows certain concepts and facts related fundamentally to the question under consideration. They also contend that criteria and procedures for inquiry, including critical thinking, vary significantly across different domains of knowledge; for example, there are important differences in criteria and evidence used to justify propositions in history as compared to economics, law, or physics. Therefore, critical thinking should be introduced and developed within the conceptual structures of separate academic disciplines--history, geography, political science, or economics (Cornbleth, 1985).

This position, of course, is compatible with advocacy of core content or essential knowledge anchored in academic disciplines. Issues, problems, and ideas, that might be objects of critical thinking, would be treated within the contexts of particular academic disciplines. Both essential knowledge in distinct academic disciplines of history and the social sciences and interrelated strategies and skills in critical thinking would be in the "core of common learning" of students in schools. Important outcomes of learning, endorsed by proponents of "content-free" and "generic" approaches to education for critical thinking, are also cited by advocates of synergism between critical thinking and particular domains of content. Furthermore, they claim that their position is more likely to yield these desired outcomes of education, such as capability to think and learn independently, propensity and ability to transfer or apply knowledge and cognitive processes to questions and concerns outside of the classroom, and facility in remembering and using major ideas long after details have been forgotten.

Recent research on education for critical thinking provides support for interrelated teaching and learning of critical thinking and core content in history and the social sciences. However, these findings are not conclusive; nobody knows beyond reasonable doubt that there is only one effective approach to education on critical thinking. Several research findings and proposals for practice derived from them, reviewed by Cornbleth (1985) and Sternberg (1986), are summarized below. They are presented as stimulators of discourse and inquiry, not as definitive statements.

1. Development of strategies and skills in critical thinking is enhanced by connecting education on cognitive processes to core content in particular academic disciplines in history and the social sciences. Subject-specific teaching of critical thinking may be the most effective means to build students' abilities to transfer strategies and skills to similar subjects within and outside of school.

2. Generic (content-independent) cognitive strategies and skills may be relatively weak means to development of critical thinking abilities. The goal of one generalizable model of critical thinking remains elusive and chimerical. "One implication of this is that rather than search for one 'best' mode of instruction, it would be preferable to identify the features of successful instruction in various contexts" (Cornbleth, 1985, p. 24).

3. It appears that effective teaching for critical thinking is not characterized by practice of discrete skills; rather, it involves practice of skills with recognition and understanding of how they fit together as part of a strategy and of how the strategy is interrelated with particular subject matter.

4. Teacher modeling of critical thinking and expressions of support for it in the classroom are effective means of developing students' propensities and abilities for critical thinking.

5. Strategies and skills in critical thinking can be developed through computer-based instruction in problem solving and decision making. However, these programs should fit systematically within specific subjects of the standard curriculum in order to reinforce and extend learning achieved through ongoing classroom activities in critical thinking.

6. Students' capabilities to acquire and apply strategies and skills in critical thinking are likely to be increased significantly if they practice them systematically and extensively in all subjects that comprise the social studies curriculum, and in a manner that is consistent with their cognitive development and prior learning experiences.

7. All students have some capacity for critical thinking and should be provided with ample opportunity to develop their capabilities to the fullest. Education in critical thinking "should not be the privilege of a selected intellectual minority or the luxury of the upper class" (Sternberg, 1986, p. 64). Rather, all students should have an equal chance to learn how to think critically about issues and ideas in core content of the social studies.

Civic Values

Critical thinking about issues and ideas involves values, the standards or criteria by which one weighs alternatives and makes choices. Civic values are standards used by citizens to make judgments about public issues or the policies of government officials. Schools in all countries, including the United States of America, are expected to teach civic values through education in the social studies. Recent public opinion polls and survey research studies reveal that a large majority of American adults expect morals and civic values to be taught in schools (Leming, 1985). There are disagreements, however, about what values to teach and how to teach them.

Are there civic values that all students should learn through education in the social studies? If so, what are these core civic values? How should civic values be presented in the social studies classroom?

Core values in the American heritage--freedom, majority rule, equality of opportunity, minority rights, rule of law, limited government, and so forth--are embedded in our most revered documents, such as the Declaration of Independence, the Constitution, the Federalist Papers, Jefferson's First Inaugural Address, and Lincoln's Gettysburg Address. These core civic values are emphasized in curriculum guides, textbooks, and proposals for educational reform, and most Americans seem to agree that they are essential elements of education for good citizenship in a free society.

Research reveals that an overwhelming majority of adolescents and adults readily affirm core civic values, but they often seem unwilling to apply some of these values to certain instances involving unpopular individuals or minority groups. For example, many Americans who strongly support freedom of speech, in general, tend to oppose free speech for atheists on public television broadcasts or school assembly programs. Furthermore, research indicates that many secondary school students have very superficial and incoherent notions about the meaning of freedom, equality, justice, authority, responsibility, and other core civic values in the American heritage (Leming, 1985). How can educators in schools and other institutions of our society improve teaching and learning of core civic values?

Some educators advocate direct and unquestioned transmission of civic traditions and values. Indoctrination, flagrant or subtle, is the preferred method of teaching certain answers to all quesitons of right and wrong, good or bad. Complex, perennial issues are reduced to simple dichotomies, in which the "correct" response is indicated clearly, emphatically, and absolutely. In this view, there is no place for deliberation and critical thinking about options; instead answers are justified by references to an all-encompassing doctrine or ideology that is supposed to determine all "right" thoughts and actions. According to Leming (1985, p. 155), "There appears to be a renewed interest in an approach to moral education that subscribes to the ideal that schools have a responsibility to inculcate basic cultural and political values and behaviors."

Inculcation may be employed effectively and appropriately to develop habits of hygiene and deportment and to shape character (instilling virtues of honesty, kindness, and so forth). In a free society, however, inculcation cannot be the single method of teaching about values or anything else. Rather, as students mature, they should have more and more exposure to education in critical thinking about issues, which allows rational justification of core civic values. Sydney Hook, an eminent philosopher committed to educating students about core civic values in our American heritage, says: "A free society not only permits but encourages questioning, commensurate with the intellectual powers of students, as integral to learning" (1984, p. 22). By contrast, a closed or totalitarian society "never permits a critical study of its first principles and the alternatives to them."

An extreme alternative to indoctrination, unlike Sydney Hook's position, is represented by relativists who propose development of certain rational procedures in the analysis of civic values as their primary or even exclusive educational goal. Their concern for teaching particular values seems limited to building support for rationality and diversity. Teaching techniques involve case studies or simulations about complex issues. Students are challenged to decide how to minimize costs and maximize benefits as they appraise options in terms of their values. An assumption of this position is that basic values, in which choices are grounded, may vary considerably from student to student and from one situation to another in the deliberations of a particular student. Teachers are expected to guide students in their use of rational processes needed to analyze and clarify value judgments, but they are not supposed to prescribe values or choices made in terms of them. Furthermore, extreme open-mindedness and tolerance of diverse viewpoints should prevail in the classroom. In this position, there are "right" procedures in thinking about values, but no "right" answers. Leming's view of research (1985) on values clarification--a relativistic and process oriented position--reveals mixed findings and confusion about the instructional power of this approach. On balance, it seems to be a rather weak means to significant gains in students' comprehension of civic values or capabilities in using cognitive strategies and skills. This position on values education is not practiced widely in American elementary and secondary schools.

In contrast to extreme positions on values education, many educators propose a middle way, which involves commitment to core civic values and critical thinking in the use of these standards to judge options and make choices about public issues and policies. This position recognizes that teachers in schools cannot evade responsibility for imparting and reinforcing core civic values of the society that sponsors them. Schools are major agencies in the socialization of youngsters--the process of inducting each generation into the roles and institutions of an orderly society--which necessarily involves direct and emphatic instruction on traditions, standards, and ideals that define a civilization. However, a fundamental ideal of the American heritage is freedom to think, inquire, and communicate ideas--even if the ideas are unusual or unpopular or critical of prevailing practices and beliefs. The Constitution guarantees civil liberties of individuals and minority groups against the tyranny of ruling elites and the tyranny of majority rule.

Proponents of this middle-way position want students to learn about inherent paradoxes of a free society--the inevitable tensions between socialization and social criticism, authority and liberty, majority rule and minority rights--which generate perennial public issues (Butts, 1980). A fundamental objective is teaching students to avoid polar extremes in a paradox while seeking the balance between values in conflict. For example, students should be challenged to appraise complex issues in American history that have involved tensions between the core values of majority rule and minority rights. Classic analyses and decisions about these issues and values, found in landmark cases of the Supreme Court, should be staples of the curriculum.

Balanced education about values and issues in American schools has been threatened periodically by "curriculum evangelists" who want to promote their doctrines among captive audiences of students. Textbooks are prime targets of these dogmatists who want to purge the curriculum of "immoral" or "false" or "unpatriotic" content. From the 1960s to the 1980s teachers have been under heavy pressures from one-sided advocates of various left-wing and right-wing causes or ideologies. Butts (1980) and Janowitz (1983) urge educators in the social studies to resist pressures from extremists to use the schools to promote their causes; educators should, instead, maintain high standards of scholarship and fairness in teaching about civic values and other facets of the curriculum.

Scholarly literature on the teaching of civic values includes research findings and propositions about practices that are compatible with the views of R. Freeman Butts, Morris Janowitz, and Sydney Hook on the necessity of rejecting the positions of extremists (dogmatists and relativists) in teaching about civic values. These ideas are summarized below.

1. Direct instruction can be used to develop knowledge of civic values and skills in literal comprehension and interpretation of them. It can also contribute to acquisition of specific skills in critical thinking about civic values in relationship to public issues or problems (NCSS Task Force, 1984). Direct methods include didactic teaching about exemplars of good citizenship in episodes from history and current events, authoritative reinforcement of classroom behavior that exemplifies core civic values, expository lessons on the meaning of civic values, and teacher-guided analysis of values in case studies of public issues and decisions.

2. Indirect teaching contributes to development of certain civic values and cognitive capabilities. Indirect methods pertain to the context of teaching and learning about values--the classroom climate, interactions of teacher and students in discussions of public issues and decisions, and opportunities to explore various positions through independent study. There is a positive relationship between investigation of public issues in open and supportive classroom environments and development of democratic values and strategies in critical thinking. If students feel free to examine and express ideas about public issues, they are more likely to support civic values and learn cognitive strategies necessary to effective citizenship in a free society (Leming, 1985; Johnson & Johnson, 1979).

3. Direct and indirect methods of teaching can be used in combination to address distinct and complementary objectives, such as building students' knowledge about civic values of a free society, strategies and skills in applying civic values to critical thinking about public issues and decisions, and support for civic values (NCSS Task Force, 1983).

4. Core civic values of a free society can be taught most effectively in connection with knowledge and critical thinking processes anchored in academic disciplines of history and the social sciences; these connections are likely to contribute significantly to students' comprehension of core values and their ability to apply them to analyses and appraisals of ideas (NCSS Task Force, 1983; Boyer, 1983).

Summary

Educational reform in elementary and secondary schools has been a hot topic during the 1980s. Major newspapers, magazines, and television networks have highlighted reports and debates about teaching and learning of basic subjects, including history and the social sciences; these subjects comprise the social studies curriculum in schools. Public concern and criticism has stimulated educators in the social studies to reappraise theories and practices in curriculum development and pedagogy. There has been lively discourse about knowledge, cognitive skills, and values that all students might be expected to learn through education in the social studies. Three major topics in this debate are (a) core content, (b) critical thinking, and (c) civic values.

Core Content

Leaders of the educational reform movement recommend required core content anchored in the disciplines of American history, history of western and nonwestern civilizations, government or political science, geography, and economics. They assume that all secondary school students have need for and ability to learn conceptual frameworks of academic subjects. Proponents of an extensive core content requirement in the social studies contend that it would provide students of all social classes with equal access to knowledge needed for competent participation in contemporary American society, bring coherence and integrity to the curriculum, and enhance national unity and cohesion in a pluralistic society.

Opponents of the core content position argue it would not meet needs of students with little interest in or aptitude for academic work or preparation for college. Furthermore, it would violate longstanding commitments to address individual differences through many options in the curriculum. Finally, it would confine perspectives of students to the boundaries of academic disciplines and thereby limit insights, creativity, and knowledge of reality. Selection and organization of content around public issues, social problems, and timely topics are favored by many opponents of the academic subjects position. An assumption of this interdisciplinary approach is that strategies and skills in thinking about issues or problems are much more significant educationally than content.

Critical Thinking

Educators with differing views about core content have, in general, endorsed critical thinking, and they tend to agree that it is not treated extensively or satisfactorily in most social studies classrooms. However, there is disagreement about the meaning, purposes, and practices of critical thinking.

Construed broadly, critical thinking in the social studies is equated with problem-solving or inquiry. Narrow definitions specify evaluation as the core of critical thinking. Conceived broadly or narrowly, critical thinking implies skepticism and rationality in appraisal of claims about knowledge and ideals. Critical thinking is not synonymous with negativism or iconoclasm. It is compatible with the highest ideals of scholarship and citizenship in a free society.

One position on critical thinking in the social studies advocates the primacy of cognitive skills, which should be the constant and essential elements of a curriculum. In this position, there is no essential knowledge; rather, subject matter to which critical thinking skills are applied might vary with interests of students in timely topics, problems, or issues. This position is supposed to develop generalizable skills that might be transferred pervasively to subjects within and outside of school.

An opposing position holds that cognitive processes and core content are equally important and should be treated in concert. In this position, development of cognitive processes is assumed to be dependent upon particular structures of knowledge. Thus, critical thinking about issues or problems should be taught within separate academic disciplines to yield desirable outcomes, such as enduring ability to apply cognitive processes and particular knowledge to issues and problems in new settings.

Civic Values

Critical thinking involves values, the criteria by which thinkers judge alternatives and make choices. Civic values are standards or criteria used by citizens to make judgments about public issues or policies of government officials. An overwhelming majority of Americans affirm, in the abstract, civic values in the Declaration of Independence, Constitution, and Gettysburg Address. These core civic values are stressed in curriculum guides and teaching materials, and most Americans expect them to be taught in schools, especially through subjects in the social studies. However, research indicates that many adolescents and adults have superficial or incoherent ideas about core values such as freedom, equality, justice, authority, responsibility, majority rule, and minority rights. How should these civic values be taught in social studies classrooms?

One position calls for unquestioned transmission of civic values. Teachers should impose "correct" answers clearly and absolutely, even to complex, perennial issues.

A second position proposes extreme relativism, a primary or exclusive concern with rational procedures in analyzing or clarifying values. Teachers are guides to "right" procedures in thinking about values, but they are not supposed to prescribe values other than commitment to diversity, open-mindedness, and rationality.

A third position represents a middle way between excessive inculcation and extreme relativism. This position recognizes that educators should develop commitment to core civic values of a free society, which include freedom to inquire, criticize, and communicate ideas. Proponents of this position want students to reflect upon complex, perennial issues associated with paradoxes of a free society, such as majority rule with minority rights or liberty with authority. A fundamental objective is teaching students to avoid polar extremes in a paradox while seeking the delicate balance between values in conflict.

Propositions on Core Content, Critical Thinking, Civic Values

The following propositions are responses to current issues in social studies education on core content, critical thinking, and civic values. There is substantial, but not conclusive, support for these statements in the literature on curriculum development and teaching in the social studies. Therefore, the propositions are offered primarily as stimulators of discourse and inquiry and as tentative guides to educational practice.

1. Strong and extensive emphasis on core content, based on conceptual frameworks of academic disciplines in history and social sciences, is likely to lead to significant increases in knowledge among large numbers of secondary school students.

2. Effective teaching and learning of critical thinking involves practice of skills in terms of a cognitive strategy and in concert with core content of specific academic disciplines.

3. Core civic values of a free society can be taught most effectively in connection with knowledge and critical thinking processes anchored in conceptual frameworks in history and the social sciences; these connections are likely to contribute significantly to students' comprehension of core civic values, to their ability to use them to analyze and appraise ideas, and to their support for them.

4. Students' acquisition, retention, and effective use of core content, cognitive processes (critical thinking), and civic values are likely to be facilitated greatly if these essential elements of the curriculum are structured logically and interrelatedly within and between subjects and from one one level to the next, with gradual increases in complexity and standards of achievement that fit the cognitive development and prior learning experiences of students.

5. Direct instruction can be used to develop students' knowledge of civic values and skills in thinking critically about them. Direct methods include didactic teaching and modeling and reinforcement of desired behavior.

6. Indirect teaching procedures, such as discussion of issues in an open and supportive classroom environment, are related to students' development of critical thinking strategies and core civic values of a free society.

7. Direct and indirect methods of teaching can be combined and used effectively to build students' knowledge of core civic values of a free society, strategies and skills in applying them to critical thinking about public issues and policies, and commitment to them.

8. All students, regardless of social class or presumed limitations in ambition or ability, have some capacity to learn core content, critical thinking, and civic values. This potential can be developed more extensively than in the past through core curriculum requirements. If so, opportunities for academic achievement, socioeconomic advancement, and effective citizenship will be spread more widely and equitably in our society.

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THREE CRUCIAL ISSUES CONCERNING THE PREPARATION OF TEACHERS FOR OUR CLASSROOMS: DEFINITION, DEVELOPMENT, AND DETERMINATION OF COMPETENCE

Elizabeth A. Ashburn
Eric Clearinghouse on Teacher Education

Although "alternative routes" to becoming a teacher are increasing (Alternative certification for teachers, 1986), education for the teaching profession occurs primarily in more than 1,200 institutions of higher are education in the United States. Approximately 140,000 teacher candidates graduated each year. Teacher education programs are centered in schools, colleges, and departments of education; however, the arts and sciences faculty assume a major role in teaching both general knowledge, such as freshman English, and specialized content, such as the history major for prospective secondary teachers (Egbert, 1985).

There are many differences in how programs for the initial education of teachers are structured and in how states govern the programs. In one setting, a few faculty members may teach all the education courses and supervise student teaching; in another, the college of education may be an administrative unit in a university with 140 faculty members and many programs in addition to teacher preparation. The states vary in a similar way in what they prescribe for teacher education program course content (Egbert, 1985).

The image of teacher education programs is one of "easy access and easy exit." Among other factors, the large number of preparing institutions contributes to this image, as well as the much publicized data about the quality of teacher education students as measured on the SAT (Egbert, 1985; Gideonse, 1983). Despite the image, however, there is as much variation in student and program "quality" as there is in program content, program structure, and state governance. This variation reflects the complexity inherent in teaching, as Jackson (1986) so clearly and fully describes.

As a consequence of the many differences, it is impossible to describe the education of teachers with the same precision that one might, for example, describe the teaching of reading to first-graders. In this example, we know the population (first-graders); we know the typical setting (the first-grade clasroom with a first-grade teacher and small reading groups); we have theories about what to teach, how to teach it, and about how reading is learned; we have standard texts and curricula for the pupils; and we know with some specificity what variables need to be considered, such as developmental readiness to learn to read (Calfee & Drum, 1986). We also know clearly what the goal is--a child who can read--and how to measure it. The population, curriculum, methodology, and outcome of the teaching of prospective teachers, however, are not as clear-cut.

Despite the fact that teachers have been "trained and educated" for teaching positions in the United States for about 150 years, we are only now on the threshold of developing knowledge based on research which helps us to understand the process of educating for teaching, to raise fundamental questions about this process, and to structure a context so that the process encourages professional development. An examination of the 1985 edition of The International Encyclopedia of Education reflects this threshold. It contains seven entries under the heading of "Educational Technology" but only one entry for "Teacher Education: Concepts" and one entry for "Inservice Teacher Education." There are 31 entries, however, about teachers and teaching. Teacher education is much older than educational technology, yet much younger in its recognition as a process and context distinct from that of teaching. This simultaneous oldness and youngness gives rise to much of the debate today about teacher education: If it has existed for 150 years, why do we know so little about it? Is there, in fact, nothing to know? Is it true that anyone can be a teacher, as long as she/he knows the subject? These questions are implicit in the public debate about teacher education today.

The dearth of Encyclopedia entries about teacher education also reflects the lack of a substantial, coherent body of literature that addresses, at minimum, the following fundamental questions:

1. Definition of competence: What characterizes competent teachers?

2. Development of competence: What is the curriculum for developing competent beginning teachers?

3. Determination of competence: How is the competence of teachers measured?

Answers to these three questions are essential to improving teacher education and the quality of teaching in our classrooms. The consequence of not dealing with these questions is the maintenance of the status quo in education.

These crucial issues are described in order, and some directions for responses are outlined.

Definition of Competence:
What Characterizes Competent Teachers?

What is a competent teacher? This is the fundamental question underlying the current public debate about the quality of education in our country. According to Judith Lanier, dean of the College of Education at Michigan State University and chair of the Holmes Group, "educators have reached no agreement on the definition of good teaching" (Lanier, 1986, p. 553). Reviewing some of these definitions will show us the nature of the various perspectives on this central question.

Brophy and Good (1986) say that "What constitutes 'teacher effectiveness' is a matter of definition, and most definitions include success in socializing students and promoting their affective and personal development in addition to success in fostering their mastery of formal curricula" (p. 328). The same T.L. Good, in 1979, said that "teacher effectiveness refers to the ability of a classroom teacher to produce higher-than-predicted gains on standardized achievement tests" (cited in Shulman, 1986, p. 52). In seven years, then, one educational researcher has broadened his definition of effectiveness from merely increasing the classroom average on achievement test scores to include the successful socialization of students.

According to Shulman (1986), the definition used in research about teacher competence has been "a teacher is effective if, within the time period studied, students, averaged over the whole class, answered more questions correctly on multiple-choice standardized achievement tests than expected, based on the pretest performance. Under these conditions the students in the effective teacher's class are said to have learned more than expected" (p. 52). Shulman's summary of how educational research has defined the competent teacher sounds much like Good's 1979 definition, adding the notion that student learning is inferred from class averages on multiple choice tests.

What do teachers think about "teacher competence"? According to the co-directors of the Research and Development Center on Teacher Education, Sharon Feiman-Nemser and Robert Floden, "the practical wisdom of competent teachers remains a largely untapped source of insights for the improvement of teaching [in all areas]. Uncovering that knowledge is a major task in research...that can lead to policies that build on what teachers know" (1986, p. 505). Conceptions of the effective teacher over the years have included "possessor of desirable traits," "user of effective methods," "creator of a good classroom atmosphere," "master of a repertoire of competencies," and "professional decision maker who has not only mastered need competencies but learned when to apply them and how to orchestrate them" (Brophy & Good, 1986, p. 329). Katz and Raths (1985) would add that competent teachers have the "disposition" to apply and orchestrate these needed competencies. University of Georgia's teacher educators Payne and Manning (1985) conclude from recent research that an "often overlooked variable for success in the classroom is the characteristics inherent in teachers' personal dimensions--self-awareness, self-concept, attitudes, and expectations of self and others" (p. 81). Philip Schlechty said recently at a Wingspread Conference on teacher quality that most teachers are competent, and it is their job performance that is problematic.

How is job performance different from teacher competence? And how is teacher competence different from a teaching competency? According to Edmund Short at The Pennsylvania State University,

> Few issues in education have aroused greater controversy in recent years than those surrounding the nature of competence. Significant questions have been raised about what the term "competence" really means.... [The term] appears to refer to several different concepts, ranging from very narrow understandings of the term to very broad ones. Effective communication is consequently made difficult. (Short, 1985, p. 2)

To clarify the confusion, he presents four different conceptions of competence:

- competence as behavior or performance, the doing of particular things independently of purpose or intent.
- competence as command of knowledge or skills, involving choosing and knowing why the choice is appropriate.
- competence as level of capability which has been "sufficient" through some judicious and public process; this sufficiency indicator may fluctuate since it involves a value judgment.
- competence as a quality of a person or state of being, including more than characteristic behaviors: "performances, knowledge, skills, levels of sufficiency, and anything else that may seem relevant, such as intent, or motives, or attitudes, or particular qualities" (Short, 1985, p. 5). This fourth definition, he says, implies that many theories about teacher competence can exist, all of which can be justified.

Zahorik (1986) supports this argument for multiple theories of teacher competence, based on the existence of multiple conceptions of good teaching:

> There are some teaching skills that all teachers ought to possess. All teachers, for example, ought to be able to give lucid explanations, they ought to be able to structure knowledge in a way that promotes understanding, and they ought to be able to manage groups of learners. But beyond a few obvious skills such as these, identifying universal teaching skills is difficult because teaching skills emerge from one's conception of good teaching. (p. 21)

The conception of good teaching varies developmentally, he suggests; it is different for a beginning teacher than for a mature teacher. Not only does the conception of good teaching vary with teachers' development, there are also qualitatively different conceptions. Fenstermacher and Soltis (1986) present three qualitatively different conceptions of teaching, each with its own foundations in history and research: the teacher as an "executor," whose purpose is to use the best skills and techniques available to bring about specific learning in students; the teacher as a therapist, whose purpose is to help students grow personally; the teacher as a liberator, whose purpose is to develop in pupils autonomy, rationality, and morality. What the teacher chooses to do in the classroom depends on his conception of his teaching role, and how his competence is determined depends on this conception as it is expressed in the assessment measures.

In addition to developmental and qualitatively different conceptions of teaching, contextual variations also play a role in defining teacher competence. According to Brophy and Good (1986), effectiveness

> varies with context. What appears to be just the right amount of demandingness (or structuring, or praise, etc.) for one class might be too much for a second class but not enough for a third class. Even within the same class, what constitutes effective instruction will vary according to subject matter, group size, and the specific instructional objective being pursued. (p. 370)

Thus, how teacher competence is defined depends on a number of things:

1. the outcomes desired from teaching, from increased classroom average scores on standardized achievement tests to the development of pupils' social skills.

2. the length of time in teaching.

3. the conception of the teacher's role.

4. the context for teaching, from first grade to twelfth grade, college bound to learning disabled, urban to rural, and many other varying contexts.

5. the level of competence according to Short (1985), from competence in a single behavior to competence as a quality of a person.

With the definition of teacher competence dependent on so many factors, the development and determination of teacher competence is clearly a complex matter.

Development of Competence:
What Is the Curriculum for Developing Competent Beginning Teachers?

Teacher candidates in the undergraduate curriculum typically take courses from three different categories--general studies, subject specialization, and professional studies. About one-third of the courses are general studies, which all liberal arts students take, such as math, natural and social sciences, and humanities. The second category is the subject specialization, or subject major. Secondary teacher candidates often have essentially the same subject matter course requirements as do nonteaching majors in that field (history, chemistry, or English, and so forth). Elementary teacher candidates usually major in elementary education with a posssible subject area minor. Professional studies, the third category, includes foundations courses, such as child and adolescent development, educational psychology, and history and philosophy of education, as well as methods courses and student teaching (Egbert, 1985; Lanier & Little, 1986).

Beyond this general description, it is hard to characterize the curriculum for the initial preparation of teachers. One college may require 20 credit hours in math and natural sciences in general studies, while another may require only two. Some require an educational psychology course in professional studies; some do not. Some secondary programs require reading methods; others do not. The list of variations in required curriculum content seems endless. Both states and institutions control what these requirements may be; teacher education is "just about whatever the state or the faculty defines it as being" (Egbert, 1985, p. 17).

While there appears to be increasing agreement among some leading educational thinkers about essential topics to be addressed in the preservice professional curriculum, the evidence indicates that programs have yet to be affected by this thinking (Evertson, Hawley, & Zlotnik, 1985; Weil, 1985). Moreover, what we know about effective teaching from research we have learned only in the past decade, so that a significant body of research knowledge has not, until now, been available for teacher education programs (Brophy & Good, 1986). Even this relatively new body of knowledge is limited. According to Barak Rosenshine, a prominent researcher in this area,

> The research on effective teaching conducted since 1974 has yielded a pattern of instruction that is particularly useful for teaching a body of content or well-defined skills...[e.g., mathematical procedures, science facts, grammatical rules]. These findings are less relevant for teaching in areas that are less well-structured, that is, where the skills do not follow explicit steps or the concepts are fuzzier and entangled. Thus, the results of this research are less relevant for teaching composition, writing of term papers, reading comprehension, analyzing literature or historical trends. (Rosenshine, 1986, p. 60)

Other areas which have been suggested as content for the teacher education curriculum and which have a substantial research knowledge base include the language of classroom communication, teacher planning and decision-making, the teaching context (such as grade level, curriculum, and organizational dynamics), and school effectiveness knowledge. Virginia Koehler, formerly associate director for teaching and learning at the National Institute of Education and now a teacher educator, and other writers discuss these in a volume entitled Essential Knowledge for Beginning Educators (Smith, 1983).

More subject expertise also has been proposed as a way to increase teaching effectiveness; there is little research, however, to indicate that increasing teachers' subject knowledge beyond the current typical certification requirements will significantly increase teacher effectiveness (Evertson, Hawley, & Zlotnik, 1985). It is also argued that broadening the liberal arts foundation will increase the effectiveness of teachers; however, empirical evidence does not exist to support this argument (Evertson, Hawley, & Zlotnik, 1985).

Lee Shulman, a recent past president of the American Educational Research Association (AERA), has criticized the research about teaching as it relates to subject matter expertise, saying it has generally been ignored. While subject content areas have been used as context variables--for example, in fifth-grade mathematics classes, certain behaviors of teachers have been associated with certain behaviors of their pupils--no research has been done on the subject matter content itself or the "organization of the content knowledge in the minds of the teachers" (Shulman, 1986, p. 6). He points out the serious consequences of this omission for our state programs of teacher certification and evaluation: "Policymakers read the research on teaching literature and...find little or no reference to subject matter, so the resulting standards or mandates lack any reference to content dimensions of teaching" (p. 6). He continues that what we do not have answers to are "questions about the content of the lessons taught, the questions asked, and the explanations offered. From the perspective of teacher development and teacher education, a host of questions arise. Where do teacher explanations come from? How do teachers decide what to teach, how to represent it, how to question students about it and how to deal with problems of misunderstanding?" Research has not provided answers for what forms of content knowledge should be included in the preservice curriculum, or for how much content knowledge is sufficient for the beginning teacher.

Beyond more research knowledge and subject matter content, other areas have been proposed as important to the development of the teacher candidate. Professional ethics is one (Soltis, 1986). Rich (1985) says, "In sharp contrast to increased courses in medical, legal, and business ethics, few teacher education programs provide a systematic study of professional ethics, despite the fact that teachers will be held fully accountable for observing ethical behavior" (p. 21). Among the functions of professional ethics, he says, is to assure "that professional services will be rendered in accordance with reasonably high standards and acceptable moral conduct... [and to deter] increased government intervention" (p. 21). He argues that a necessary condition for the development of competent teachers and the development of teaching as a full-fledged profession is the observation of ethical principles, and that

> Ethical behavior is more complex than following the rules of a code: it involves learning to think, act, and acquire the attitudes of a professional teacher and to be guided by one's own philosophy of education. It is necessary for the prospective teacher to adopt relevant ethical principles, understand the grounds for holding them, and practice applying them in daily situations. (pp. 22-23)

The resources we have for such study, he concludes, are minimal, particularly compared to medical ethics. He cites a 1962 source recommending that credit hours in professional ethics be required in state certification regulations; while no state currently has such a requirement, the new teacher education program standards for accreditation require the inclusion of the study of professional ethics (NCATE, 1985). The theme of the most recent Journal of Teacher Education (Vol. 37, No. 3) is professional ethics in teacher education, reflecting teacher educators' increasing interest in ethics education.

Another area for the attention of the preservice teacher education curriculum has been labeled "dispositions" by teacher educators Lilian Katz and James Raths (1985). Dispositions are "trends in behavior" and may either help to achieve or obstruct effective teaching. Their research suggests that teacher educators believe that dispositions contribute more to teacher effectiveness than either skills or knowledge. Some examples of dispositions they provide are:

- The disposition to experiment with alternative methods of teaching, and to examine the effects of methods used and modify them accordingly.
- The disposition to seek help with one's teaching when confronted with a problem.
- The disposition to explain and clarify and provide assistance to students who have difficulty understanding.

The fact that a teacher or teacher candidate has a particular skill is not what is ultimately important, they contend; it is whether the teacher is disposed to use that skill. The implication for the teacher education curriculum, then, is the incorporation of the idea of dispositions into the curriculum goals.

Determining the skills that teachers should learn must be related to the needs of teachers as they develop from novice to mature teachers, according to Zahorik (1986). It is the practical, specific skills derived from science-research that should be emphasized in the preservice program. Lesser emphasis at this point should be placed on what Zahorik calls the "art-craft skills" of observation, reflection, and creation. An important concept that he adds to the curriculum debate is that teacher education is a "long-term endeavor" and that the developmental needs of the teacher candidate should play a role in professional curriculum decisions. Much more attention needs to be given to what the beginning teacher needs to know, and, beyond that, what developing teachers need to know at different stages.

What teachers should learn before they begin to teach, then, is clearly an important debate. How teachers can be taught effectively to teach is also an important question for the curriculum. This question includes methods for teaching teachers. One example of a professional curriculum method is microteaching, a simulation technique that emphasizes one skill to be learned, such as questioning students in a particular way. The teacher candidate prepares and delivers a short lesson with this focus, and receives immediate feedback. Research shows that this can be an effective teacher education method (Evertson, Hawley, & Zlotnik, 1985).

Student teaching, another method of the curriculum, has traditionally been an essential part of teacher preparation. New teachers usually cite student teaching as the most useful part of their professional preparation (Berliner, 1985). Research does not provide adequate evidence, however, that student teaching as it is typically encountered is an effective way to prepare teachers (Evertson, Hawley, & Zlotnik, 1985; Berliner, 1985).

David Berliner, another past president of AERA, argues that student teaching is "injurious" and "retards the development of analytic skills and thus, in its present form, militates against the development of the profession" (Berliner, 1985, p. 3). He advocates the development of pedagogical laboratories in which student candidates can be taught concepts, expert teachers can provide critiques of the lessons, and teaching activities can be analyzed by the teacher candidates, their peers, and the pupils themselves. Resources for such laboratories would include

> video equipment and the money to pay experts to analyze teacher performance, just as do the track and football coaches. The average teacher in training in the United States gets very little analysis of his or her teaching performance with video tape. Television is useful, too, for learning the educational significance of our most treasured concepts...such as intelligence, where the television can show the responses of extremely bright, average, and very dull children to the same stimulus.... Bloom's taxonomy can be illustrated with television tapes of children struggling with questions at different levels of the taxonomy as they provide answers to different kinds of questions....we must question whether beginning teachers will be able to [use these concepts] if the concepts are taught only as book information. (Berliner, 1985, pp. 6-7)

Another "methods" question is how teacher candidates can be taught the skills and procedures and thought processes that they do not understand that they need to know (Koehler, 1985). This difficulty for the professional curriculum has been labeled the "feed-forward" problem:

> All preservice training can be characterized as anticipatory socialization, which inevitably involves giving students answers to questions not yet asked, and not likely to be asked until students are in the thick of actual service. This aspect of socialization can be called the feed-forward problem....It includes resistance from the student at the time of exposure to given learnings and, later, protestations that the same learnings had not been provided, should have been provided, or should have been provided in stronger doses. (Katz, et al., 1981, p. 21, cited in Koehler, 1985)

Answers are needed to these questions about how to best teach teacher candidates. The knowledge, information, and skill they must have should be taught

> in ways that respect the uniqueness of each classroom and recognize that classrooms are complex social settings in which teachers must process a great deal of information rapidly, deal with several agendas simultaneously, and make quick decisions throughout the day. Thus, rather than trying to translate it into overly rigid or generalized prescriptions, teacher educators should present this information within a decision-making format that

> enables them to examine concepts critically and adapt them to the particular contexts in which they teach....Research on how teacher education programs can accomplish this effectively is badly needed. (Brophy & Good, 1986, p. 370)

This "decision-making format" to which Brophy and Good refer is a critical aspect of the "how" of the preservice teacher education curriculum. We must understand how to structure the curriculum so that teacher candidates develop their own frameworks for decision making based on, among other things, research knowledge, subject matter knowledge, practical knowledge, ethics, conceptions of teaching, and the information they have about the particular teaching context and the particular children.

Determination of Competence:
How Is the Competence of Teachers Measured?

Even though we have no consensus about what constitutes a competent teacher or about what constitutes an essential curriculum for developing competent teachers, we nevertheless try to measure competence. Judgments about teachers' competence are being made by states, the media, and the public in general, without a clear understanding of what is meant by competence and without a public delineation of the conception of good teaching.

There are three fundamental ways that are used in our educational system to determine competent teaching: teacher testing, teacher evaluation, and teacher certification. These three ways are different in concept, but closely tied procedurally, since testing and evaluation are increasingly becoming part of the certification process (AACTE, 1986).

Tests assign labels to individuals, called "scores," from which we infer the degree of teacher competence. The following are the most widely-used tests of teacher competence (AACTE, 1986):

- SAT or ACT scores. Standardized academic aptitude tests typically used for college admission.
- Californaia Basic Educational Skills Test (CBEST). Standardized test measuring basic reading, writing, and mathematics skills.
- Pre-Professional Skills Test (PPST). Also a standardized test measuring basic skills.
- State-developed tests, either in basic skills or professional knowledge.
- National Teachers Examination (NTE). The NTE has several parts: General Knowledge, Professional Knowledge, Communications Skills, and subject area exams.

Forty-four of the 50 states have mandated some form of at least one of these measures for use at some time during the teacher preparation period, according to the AACTE Teacher Education State Policy Survey (1986). The minimum scores, the competence "sufficiency indicator" in Short's terminology (1985), vary from state to state, and in some states, they vary among institutions. In some states, the minimum score has been stated as simply a "passing" grade, since score requirements vary for each test administration. The mandating of these tests to assure competent teaching has become widespread "because they are readily available, relatively inexpensive, and administratively simple" (George, 1985, p. 6). Little evidence exists, however, that these tests can predict teachers' effectiveness in the classroom. According to Dilworth (1984), "No certification examination purports to determine an individual's ability to teach. The exams merely seek to measure a person's own knowledge of what the experts consider to be the necessary basic skills" (p. 31). Research does suggest that the higher the verbal ability of teachers, the higher will be the verbal test scores of their students, especially low income minority students (Bowles & Levin, 1968). Beyond this finding, the research about predicting the performance of teachers from tests is limited and mixed, as the following indicate.

1. Academic Aptitude Tests: Ratings of teacher performance by principals and supervisors are not related to teachers' scores on academic aptitude tests, such as the SAT (Schalock, 1979; Soar, Medley, & Coker, 1983).

2. Grade Point Averages: Teachers' job performance, as measured by principals and trained observers, has been found to be positively related to grade point averages in some studies, negatively related in others, and in some, no relationship has been found (Evertson, Hawley, & Zlotnik, 1985; Lanier & Little, 1986).

3. National Teachers Examination (NTE): Teachers' scores on the NTE have had no consistent relationship to pupils' gains in achievement or observers' assessments of teacher performance (Lanier & Little, 1986; Ayers & Qualls, 1979; Andrews, Blackmon, & Mackey, 1980; Quirk et al., 1973). According to an article in the Harvard Educational Review, the NTE "was not designed for the direct evaluation of a teacher's performance but to gauge the academic and knowledge skills of prospective teachers. Therefore, the test should not be used to determine the compensation, retention, advancement, financial supplement, or employment changes of inservice teachers" (Haney et al., 1978, p. 471, cited in Dilworth).

4. State-developed Tests of Subject and Professional Knowledge: These tests are so new that research indicates little about whether they can predict teacher effectiveness.

These standardized tests, then, do not provide us with reliable distinctions among those who are more competent and less competent as teachers. Even so, "competency" tests are being used in teacher education programs as entrance and exit requirements, in the certification process (both initial and recertification), in hiring and tenure decisions, and in promotion decisions (Hammes, 1985).

The current approach to measuring the competence of teachers on standardized paper-and-pencil tests is inadequate to measure the complexity of the traits and abilities that teachers should have. Also, there is little agreement about what these traits and abilities should be. Consequently, we do not know the degree to which any particular score on any particular teacher test will help or hinder our children's learning in the classroom.

What we do know about teaching competence comes from the research base which links particular teacher behaviors to pupil achievement, discussed in the previous section on curriculum. To the degree that particular teacher behaviors, such as questioning skills, are conceived to be part of a broader definition of teacher competence, then the measurement of these behaviors is an appropriate measure of competence. While pupil achievement scores have informed us about the effects of teacher behaviors, according to Shavelson, Webb, and Burstein (1986) they are inappropriate for use as measures of teacher competence for a number of reasons.

Teacher evaluations assess actual job performance. They are typically conducted by the building principal, and the primary purpose may be either diagnostic, providing feedback to the teacher about possibilities for improved performance, or related to retention. In fact, the prevalence of successful teacher evaluations is not great; teachers resent evaluations by principals who do not know the teachers' fields, and principals' evaluations are often erratic and superficial (Lanier & Little, 1986; Brophy & Good, 1986). Thus, while the idea of teacher evaluations as a way to assure teacher competence seems appropriate to meet the complexity of the task, the implementation of the idea is lacking.

The purpose of the teacher certification process is to ensure that individuals who teach in a particular state meet minimum standards for competence (Robinson, 1985). These minimum standards are set by each state (NASDTEC, 1984); competence has been typically defined to include the completion of such requirements as course credit hours in subject matter, professional studies, and student teaching. Increasingly, the requirements are including minimum scores on standardized tests (AACTE, 1986). These requirements, which vary greatly from state to state, have not been studied for their relationship to teaching effectiveness (Hawk, Coble, & Swanson, 1985). Therefore, fulfillment of these entry level requirements does not fulfill the need to determine or assure competent teaching. Given what is known about competency testing, it appears that the increasing use of tests in the certification process will not increase the assurance of competent teachers.

Adding to this problem, emergency certificates are issued when there is a teacher shortage to individuals who do not meet the state's regular certification requirements (AACTE, 1986; Roth, 1984). In this circumstance, those with undergraduate degrees are allowed to teach, without having completed a formal preservice professional curriculum.

Another problem is misassignment; teachers who hold certificates in one field are being assigned to teach in other fields for which they are unprepared (Robinson, 1985; Roth, 1984). According to a recent report, we do not know precisely how many misassignments there are, but it is a more common occurrence than official statements indicate. The report states that the misassignment of teachers "constitutes a scandal in the making for the entire profession":

> Misassignments occur because many states grant local school administrators authority to assign certified teachers outside their fields of academic preparation under certain circumstances, and even specify that limited amounts of out-of-field teaching need not be reported as such.
>
> Individuals originally certified in English may be assigned to teach science; a vocational education instructor may teach a social studies class.
>
> Nationwide, thousands stand before thousands upon thousands of children, charged with instruction in disciplines not their own. And these are not peripheral subjects but English and math, history and science. The consequences for the nation's students, supposedly being educated in these basic subjects, are enormous. (Robinson, 1985, p. 6)

Both these variations in the certification process--emergency certification and misassignments--render useless certification's stated purpose to assure minimally competent teachers in our classrooms.

Directions for Resolution of the Issues

The following are directions being offered by those in the field for resolution to these three interrelated issues:

1. Development of professional examinations for teachers, which reflect both content and process knowledge and which are likely to be passed only by those who have been professionally educated for teaching (Shulman, 1986). A major effort is being funded by the Carnegie Corporation to develop teacher assessments that are comprehensive, that may take several days to complete, and that would assess teachers' classroom performance, their planning skills, and their interpersonal relationships to students (Report on Education Research, 1985).

2. Establishment of a Professional Standards Board and a certification process at the national level, similar to what is done in the medical, legal, and accounting professions. The report from the Carnegie Task Force on Teaching as a Profession has as a key aspect of its plan the formation of a national certification board organized with a regional and state membership structure (Carnegie Forum, 1986). This board would establish standards for what teachers need to know and be able to do and would certify teachers who meet those standards.

3. Incorporation of a well-defined research knowledge base into the professional preparation programs. The National Council for the Accreditation of Teacher Education has recently adopted new standards for its program accreditation process. One of the five standards concerns the knowledge base for professional education. All institutions which are accredited by NCATE will have to meet this standard which includes evidence that "established and current educational research and essential knowledge of sound professional practice...[are incorporated] in all professional education programs." Programs must have formally adopted a professional education model, with rationales and undergirding knowledge bases clearly stated (NCATE, 1985, p. 15). Various state efforts are also underway. Nebraska, for example, is using a consortium of institutions to decide what research knowledge to include in programs and how to incorporate that knowledge (Egbert & Kluender, 1984). At the national level, support for this work has come from the Office of Educational Research and Improvement. Twenty-nine demonstration projects were funded in the fall of 1985 to incorporate research knowledge into teacher education programs; this funding was based on results of an earlier pilot project reported in a full issue of the Journal of Teacher Education (1984, Vol. 35, No. 4).

4. Research on effective teachers--their attitudes, beliefs, and dispositions--and incorporation of those ways of thinking into teacher preparation programs. On the basis that teacher attitudes have been found to be related to their performance and to pupil outcomes, a study of staffing and schooling currently being conducted by the Rand Corporation proposes to examine the possible link between teachers' attitudes and their teaching practices.

5. Assessment of misassignments. The same Rand study of staffing will determine the prevalence of misassignments in the sample.

6. Study of the processes of preservice teacher education, and how knowledge, skills, attitudes, thought processes, and procedures can be taught most effectively to teacher candidates (Brophy & Good, 1986; Lanier & Little, 1986).

7. Improvement of conditions in the workplace, so that there will be incentives for those individuals who have the capability to become competent teachers (Carnegie Forum, 1986). According to Samuel Bachrach, a professor of organizational behavior at Cornell University, "It is the conditions under which teachers work that are the prime de-motivators in schools...if you don't do something about the workplace, you're not going to attract anyone into teaching to start with" (Olson, 1986, p. 43). Bachrach was the director of an extensive survey of 1,800 teachers to discover the conditions in schools which prevent teachers from doing their jobs well. Bachrach says, "If you compare these data to those for other organizations then schools are some of the least supportive organizations that I have ever seen in my live" (Olson, 1986, p. 1).

If the workplace is ignored, the three issues discussed in this chapter --defining, developing, and determining competence in teachers--will become non-issues; few individuals with the capacity for competence will want to work in a setting which does not appreciate, support, or allow competence.

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CURRENT ISSUES IN TESTING, MEASUREMENT, AND EVALUATION

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Four educators describe the issues which they see to be most current in the fields of testing, measurement and evaluation. The mastery of basic skills, defined by minimum levels of competence, is discussed by Jacob G. Beard, in "Minimum Competency Testing." Issues such as accountability, social policy, instructional implications, and psychometric issues are brought to bear on the subject. C. Philip Kearney, in "Assessment of Higher Order Skills," examines a set of problems more complex than those involved with assesing basic skills. A clear definition of what constitutes higher order skills, a sound curriculum design, and available instruments for assessing higher order skills are among the goals which must be achieved to adequately teach and test higher order skills. In "Testing Teachers for Initial Certification," Rodney Roth points out some of the concerns related to testing teachers before they begin to practice their profession. Two major trends, using the National Teacher Examinations from Educational Testing Service and using state programs to develop teacher certification tests, are presented. A state-of-the-art survey by Jason Millman, "Educational Testing and the Computer," describes computer-assisted educational testing as it is used for writing test items, constructing tests, administering tests, scoring and analyzing results, and record keeping.

Minimum Competency Testing

During the last decade many school systems began defining minimum levels of competence for their students and constructing tests to measure whether the students had achieved these minimums. These minimum competencies usually included the basic skills of reading, writing, and arithmetic and their application. The term "minimum competency testing" acquired special meaning from this activity. Considerable controversy arose when, in 1976, Florida passed a law ~~which~~ requiring high school students to pass a minimum competency test in order to graduate. A class-action lawsuit was brought against Florida's school system in an effort to block the use of the test as a graduation requirement. The courts upheld the rights of school systems to establish minimum standards of competency for graduation, and many other states now have similar laws. The controversy has continued and is focused on the following issues.

Accountability

During the 1970's there was considerable criticism of the schools and accusations of lowered achievement. To many, minimum competency testing was seen as a means of holding the schools accountable for graduation of literate students who could perform the basic skills of reading, writing, and arithmetic. All students would be tested for minimum competencies and failures would be remedied before graduation. Students who were unable to remedy their weaknesses and pass the test before graduation would be given certificates, but not high school diplomas.

Many educators have expressed concern about the effects of minimum competency programs on the overall school curriculum, and the level of achievement resulting from the programs. There is speculation that the minimum will become the maximum competencies at the expense of higher learning levels. Such an effect has not been demonstrated; however, some political and educational leaders have responded to the concerns by adding testing programs measuring higher levels of achievement.

Statewide minimum competency testing is inconsistent with the concept of local control. Some freedom of districts to determine what is taught in the schools must be relinquished to the state when state testing programs are established. However, the curriculum for most schools is already rather fully determined by state and national policies. The idea of each school district's separately determining a unique curriculum is not consistent with current practice.

Social Issues

Minimum competency testing is seen by some as social policy. Cohen and Haney (1980) argued that it was another in a long line of educational minimums which began when elementary education was made compulsory and was followed periodically by increasing requirements for formal education. Previous minimums have been phrased in terms of age or years of schooling. Cohen and Haney point out that while the establishment of official minimums has the appearance of equalizing achievement, history shows that it merely initiates a new competition for superiority.

Minimum competency testing has also been characterized by its opponents as a racist means of denying educational credentials such as high school diplomas to minority, and particularly black, students. This argument is based on the historically greater failure rate of black than of white students on these and other academic achievement tests. Proponents of minimum competency testing argue that it is a means of improving the achievement of marginal students by identifying achievement deficiencies and ensuring that all students receive a basic education.

Instructional Implications

Minimum Competency Testing programs must be coordinated with the instructional program. The tests must have both curricular and instructional validity. That is, they must measure instructional objectives which are included in the established curriculum and which are actually taught to all of the students.

Remedial instruction should be made available to students who fail the test before retaking it. This usually requires additional funding to ensure that adequate remediation is given.

A basic premise of educational systems which adopt minimum competency testing is that credit should be given for accomplishing instructional objectives rather than for spending time in programs. This idea leads naturally to the implementation of various instructional design concepts such as: diagnosis and prescriptive learning, individualized instruction, and optimally designed instructional materials. These concepts have been introduced before, but have had limited success in achieving widespread or long-term implementation. However, effective minimum competency testing virtually necessitates the use of such systems.

Psychometric Issues

When minimum competency tests are used to make decisions having serious consequences for students, the psychometric properties of the test scores become especially important. Individuals denied high school diplomas on the basis of minimum competency test results have sued the educational system. They have charged that the use of inadequate tests constituted violation of the due process and equal protection clauses of the Fourteenth Amendment to the Constitution. Therefore, users of such test results should make sure that the testing program conforms to the standards of quality set forth by the testing profession. This includes adherence to the Standards for Educational and Psychological Tests published jointly by the American Psychological Association, American Educational Research Association, and National Council on Measurement in Education (1985). The following criteria are especially important for minimum competency tests.

- The tests must have content, curricular, and instructional validity; that is, they must test material which has been taught to all the students.

- Students must be given adequate warning of new standards for graduation.

- The test scores which assign students to the categories of pass or fail must be reliable for that purpose.

- The passing score representing the achievement of minimum competency must be arrived at rationally and the level of skill it represents must not fluctuate from one test administration to another.

- The test must not contain items which are biased for or against any racial, ethnic, religious, sex, or other group through characteristics other than the measurement of stated instructional objectives.
- Absolute security of the tests must be maintained.
- Test administrations must be standard at all testing sites.

Trends

Minimum competency testing continues to be used as a requirement for high school graduation and has been introduced at other levels of education. For example, several states have installed tests of minimum competency for college sophomores and for teacher certification.

Several states have responded to concerns about lowered achievement expectations by initiating testing programs which measure levels of achievement beyond the basic skills within, or in addition to, their minimum competency testing programs.

Assessment of Higher Order Skills

The teaching and testing of higher order skills is fast taking on the characteristics of a nationwide educational reform movement. Several states are developing and implementing programs aimed at assessing higher order skills, local school districts are moving rapidly to adopt curricular programs that emphasize the teaching of higher order skills, educational textbook publishers and testing companies are becoming increasingly active in this area, and conferences, symposia, and workshops on this topic are springing up all across the land.

The growing concern over higher order skills stems principally from a recognition that the nation's pupils, while demonstrating modest improvement in the basic skills, are falling far short of achieving mastery of thinking skills--long considered one of the major instructional goals of schooling. There is ample evidence to support this contention--a decline in SAT and ACT scores over the past several years, results from the National Assessment of Educational Progress demonstrating a lack of analytical skills among the nation's pupils, and results from state testing programs suggesting shortcomings (Harnischfeger & Wiley, 1975; NAEP, 1981; Baron, 1985).

The higher order skills are increasingly becoming a principal focus of state level assessment efforts, a phenomenon which bodes well for those advocating a strong curricular emphasis on the higher order skills--for tests drive the curriculum, particularly state tests. What the state tests determines, in large part, what the schools teach and the relative degree of emphasis placed on the subjects and areas tested in relation to other subjects and areas of the curriculum (Rudman, 1985).

However, the assessment of higher order skills--whether at local, state, or national levels--poses problems that are more complex and substantially different from those posed by the assessment of basic skills and other subjects traditionally found in the school curriculum. The first of these problems centers on the lack of clear definition of what constitute higher order skills. What precisely is it we are talking about when we use the term "higher order skills"? A second problem is whether we are better advised to teach--and test--higher order skills as a separate subject in the curriculum, divorced from particular content areas such as reading, mathematics, and science; or whether we are better advised to teach and test higher order skills as an integral part of one or more subject areas. A third problem focuses on the availability, or unavailability, of instruments to assess student attainment in the higher order skills. Is there a need for considerable test development work or are valid and reliable measures already in existence? And there are other problems--for example, questions of a "one-tiered" versus a "two-tiered" approach (mastery of basic skills, then mastery of higher skills). Still other problems: the costs and benefits of using writing samples in measuring these skills, and questions of every-pupil testing versus a sampling of pupils.

The problem of lack of clear definition is particularly acute. "Higher order skills" is one term used to describe thinking skills. Other terms abound--critical thinking, higher order thinking skills, higher level skills, reasoning, intelligence, creative thinking, lateral thinking, informal logic, to name a few. The problem is not only to decide among these names but, perhaps more importantly, to choose what definition or conception of thinking will guide teaching and testing activities. At the present time, there seems to be little if any consensus on names or definitions. For the parent, the answer is easy: "What I want is for you to teach my child to think." For the profession, the answer is much more complex. It includes such notions as a habit of reflective thinking; a disposition or willingness to think critically, assertively, and habitually; more difficult subject matter content; critical reasoning skills; skills that go beyond recall or learning of facts; and a literal laundry list of other cognitive activities (Beyer, 1983; Kean, 1985). One acknowledged leader in the field chooses the term "critical thinking" and defines the concept as "reasonable reflective thinking that is focused on deciding what to believe or do" (Ennis, 1985). Another defines "thinking" as "the operating skill with which intelligence acts upon experience" (de Bono, 1983). Still another offers a definition of "higher order thinking skills" as:

> those skills that go beyond straight recall or learning of facts....problem identification and problem solving, evaluation of information and of arguments, deduction, inference, taking alternate points of view, creating reasonable arguments in support of a position, and making decisions. (Fremer & Daniel, 1985)

Thus, when it comes to defining precisely what thinking skills mean, it seems there is no consensus but great diversity in both terms and concepts. For those who would include higher order skills in a state assessment program, the first task is one of settling on a meaningful and useful definition.

The second problem, whether the higher skills should be taught and tested as a separate subject area or embedded or infused into existing subject matter and tested in like fashion, also lacks resolution, even though most people favor the latter. Still, the former approach, teaching and testing thinking skills as a separate topic area, has strong support among several leaders in the field. Sternberg, for example, argues that the better strategy is one that assumes intervention at the level of mental processes, and that pupils can be taught when and how to use particular mental processes, and how to combine those processes into strategies that lead to problem solutions (Sternberg, 1984). He argues for three programs to teach the components of intelligence--intelligence being his choice of name and definition of higher order skills. The three are Feuerstein's "Instrumental Environment," Lipman's "Philosophy for Children," and "The Chicago Mastery Learning Program" (Sternberg, 1984). Another acknowledged leader in the field, Edward de Bono, also argues for the direct teaching of thinking as a skill; he calls for setting aside a place in the school program so that pupils, teachers, and parents will recognize that thinking skills are taught directly (de Bono, 1983). However, de Bono is much less sanguine about ability to assess thinking. He argues that our present measures are not up to the job because they do not observe the thinker's composite performance. A third acknowledged leader, Robert Ennis, supports the inclusion of critical thinking as an inherent part of traditional subject matter, even though some contend that he favors both approaches (Ennis, 1985; Baron 1985). While there is ample evidence that either approach can work, most research seems to support Ennis's view--namely, that instruction in thinking skills should be present across subject areas and throughout the grades (Beyer, 1983; ETS, 1984; Fremer & Daniel, 1985; Kean, 1985).

Still, Connecticut, in its state level assessment programs, is using both approaches apparently with equal success. It systematically integrates higher order thinking skills into its assessment of the subject matter domains covered in the ongoing Connecticut Assessment of Educational Progress while, at the same time, it explores a variety of additional formats to measure critical thinking and reasoning skills separately and more directly in its newly developed Mastery Testing Program (Baron, 1985). Michigan, on the other hand, is moving to test thinking skills as part of a revised every-pupil reading and math assessment to be administered at grades 4, 7, and 10 and as a newly developed every-pupil writing assessment at grades 5, 8, and 11 (Michigan Department of Education, 1986). In Florida, the emphasis also is on testing higher order skills within content areas (Fremer & Daniel, 1985). Thus, while we see both approaches pursued in the assessment of higher order skills, current practice seems to give an edge to teaching and testing such skills as embedded parts of traditional subject areas.

The third problem, whether instruments currently available are adequate for assessing higher order skills, also admits of different responses. Some argue that commercially available standardized achievement tests include items that measure higher order skills, and that scores and sub-scores from these instruments can provide useful and valid information on pupil attainments of higher order skills (Fremer & Daniel, 1985; Kean, 1985). Others contend there are no topic-specific critical thinking tests available, but only tests which attempt to cover critical thinking as a whole, or focus on one aspect of critical thinking (Ennis, 1985). Still others--particularly those who develop and implement state level assessment programs--argue that, while much developmental work remains, there are measures of higher order skills that can be incorporated into ongoing programs, so state level efforts need not wait on long-term developmental efforts (Baron, 1985; MDE, 1986).

There are other problems. Should there be a two-tiered approach? Should higher-order skills be assessed only after a pupil has demonstrated mastery of the basic skills? Should writing samples be used to assess higher order skills? If so, what form should these take and how should they be scored? Is it important to test every pupil at every grade level? Or can the state accomplish its purposes by sampling grades and sampling pupils? While research can be helpful in addressing problems of these types, their ultimate resolution may depend more on the policy values and policy culture prevailing in any particular state.

Testing Teachers for Initial Certification

Testing teachers before they begin to practice their profession is not a recent phenomenon. The first official endorsement of teacher testing occurred in the colonial era (Vold, 1985). The General Assembly of Virginia in 1686 requested that every county appoint a person who would examine and license schoolmasters. The testing of teachers for county certification was dominant throughout the United States from 1860 until the early 20th century.

The development of normal schools to train teachers and the approval of teacher training programs by state departments of education led to an elimination of testing teachers for certification by the 1920s. The American Council on Education did, however, establish the National Teacher Examination in 1940. Initially, it was used by local school districts to help with teacher selection; only recently has it been used for certification.

The testing of teachers for certification has resurfaced in the past decade; a majority of states currently test teachers for certification and more states plan to start. The rebirth resulted from several major factors. Two of these factors were declining test scores and an oversupply of teachers. Another was the large scale press coverage given to a very few letters written by teachers to parents. The letters contained errors in grammar and spelling.

The rest of this section will present two major trends and procedures in the testing of teachers for initial certification and briefly discuss some current problems or dilemmas facing policy makers, researchers, and persons involved with teacher testing.

Major Trends

One trend is to use the National Teachers Examinations (NTE) from Educational Testing Service (ETS). The use of this test can be traced, in part, to two court decisions from the Carolinas. South Carolina started using the NTE to assign different grades of teacher certificates shortly after it was developed. The type of certificate affected salaries and salary increases.

In 1971, ETS issued guidelines stating that passing scores or cut-scores should be based on validation studies. In 1975, a District Court in North Carolina issued a decision requiring objective proof by the State of North Carolina of the relationship between the minimum score requirements on the NTE and the State's objective of certifying teachers who were at least minimally competent. Based on this decision, South Carolina authorized an NTE validity study by ETS.

The validity study conducted by ETS assessed the extent to which the content of the NTE tests represents the content of the teacher training programs. Teacher educators were asked to make several judgments about the overall test specifications and teacher training programs. They were further asked to review each question on the test and judge its appropriatenes. A question was considered "content appropriate" if at least 51% of the judges indicated that at least 90% of the students would have had an opportunity to learn the content.

The cut-scores derived from the validation study and adopted by South Carolina for initial teacher certification were challenged in court. In January, 1978, the United States Supreme Court announced that it had affirmed the April, 1977, decision of a Federal District Court upholding South Carolina's use of the NTE for certification. This decision prompted several other states to adopt the NTE with cut-scores based on similar validation procedures.

The United States government issued the Uniform Guidelines on Employee Selection Procedures just after the Supreme Court decision on the NTE use in South Carolina. These Guidelines apply to tests used for hiring, promotion, and licensing and certification to the extent that licensing and certification may be covered by Federal equal employment law. These Guidelines require that tests be validated in terms of job relatedness. This prompted Roth (1982) to develop a new validation procedure for his NTE study for the state of Arkansas.

This NTE study used teachers and teacher educators to judge each test item. The judges rated the relevance of the content measured by each question against the domain of knowledge they believed essential for a minimally qualified entry-level person. Most NTE validity studies done since 1982 have assessed both job relevance and the relationship to teacher training programs.

Another current trend is for states to develop their own teacher certification tests. In practice, this typically means that states contract with the National Evaluation Systems (NES) for test development and subsequent scoring and reporting services. Georgia was the first state to develop its own tests for teacher certification. Interestingly, Georgia decided not to use the NTE. This was based in part on a court decision concerning its use of the NTE for awarding an advanced teacher certificate. Georgia had selected an NTE cut-score that was not based on a validity study for the certificate. In January, 1976, a District Court ruled that the test had no rational relationship to the purpose of the certificate. The Court also indicated that a state must show a valid relationship between a general national examination and the specific duties performed by a teacher in the state.

States that develop their own tests typically use procedures following the Uniform Guidelines on Employee Selection Procedures. This means that the tests are designed based on the knowledge needed to teach a specific subject in the state. Elliott (1986) presents various procedures used by several states to develop their own tests. The key component in these procedures is a job analysis. It includes some determination of the critical and frequently performed elements of the job. The job analysis typically begins with a large number of content or topic objectives derived by content experts to define the scope of the teaching field. Teachers rate each objective according to its essentiality and the amount of time spent teaching the content. The results of this process determine the specific objectives for which test items are developed. The items are evaluated for their congruence with the objectives. The remaining items are field-tested in order to produce appropriate item and test statistics. These results are used to produce the final or actual certification test.

Problems or Dilemmas

At the outset, a major dilemma faces policy makers who must choose whether to use the NTE or develop their own test. Some of the advantages of the NTE are that the test is available; it is administered by a large and creditable testing firm; it has been used for over 45 years; and its use was upheld by the Supreme Court. One disadvantage is that appropriate tests are not available for certain certification fields. In addition, state validation studies that use current validation guidelines might indicate that the NTE is not appropriate or that the derived cut-scores are extremely low.

The major advantages of state-developed tests are that the tests can be developed for each certification field and the tests cover the essential knowledge needed to teach a field in the State. The major disadvantages are the time and cost involved for test development. A potential problem is that state-developed procedures have not been tested in the courts.

A second problem for policy makers concerns what to test. Some states test the content in the certification field; other states test professional knowledge; and still others test general knowledge. The professional and legal guidelines for employment testing seem to indicate that the further one moves away from the specific content needed for the position, the more difficult it is to show job relatedness. For example, potential math teachers should have literature as part of their training program. Should they, however, be tested on literature as well as math in order to be certified to teach math?

A major problem for educational researchers and people who develop state tests or validate existing tests is to determine what guidelines and standards are appropriate. The Supreme Court decision for South Carolina indicates that a validity study based on the teacher training program is appropriate. The Uniform Guidelines would seem to indicate that the South Carolina procedure was not appropriate. Rebell (1986) states the problem by saying that regarding the law, there is an unresolved technical issue whether Title VII and the Equal Employment Opportunity Commission (EEOC) Guidelines apply to licensing or credentialing examinations. He also raises a question of precisely how those validation standards, that were created largely in the context of individual employer job selection tests, should be implemented in the conceptually distinct licensing or credentialing context. The 1985 Standards for Educational and Psychological Tests (American Psychological Association) have also added a section on professional and occupational license and certification. These standards seem to indicate similar procedures found in the Uniform Guidelines. The impact of the Debra P case in Florida on certification testing is another unknown variable. It reintroduces the question of curricular and/or instructional validity.

After the validation guidelines or test development procedures have been decided, a new series of decisions has to be made. These concern professional judgments that have to be thought out during the process. Some examples are: Should the percentage who typically answer an item correctly be provided for the judges who are making item probability estimates; what is an appropriate standard to judge item relevance, or item essentiality, or content coverage; and what roles should various standard errors have on the process.

Conclusion

Certification is intended to protect the public. Teachers, like most professions, should be tested for initial certification. The problems associated with the process are complex, but not unsolvable.

Solutions are needed because society can neither afford to have incompetent teachers teach our children, nor can it afford to deny competent persons the chance to practice their chosen profession.

Educational Testing and the Computer

Computers are involved in educational testing in five areas: (a) writing the test items, (b) constructing the tests, (c) administering the tests, (d) scoring the tests and analyzing and interpreting the results, and (e) keeping test records. This survey describes the state of the art with respect to computer-assisted educational testing.

Writing the Test Items

Of the five areas, the writing of items has been least influenced by computers. Thus far, the potential of the computer to compose item content has not been realized.

The first attempt at computer-generated item writing took place in 1968 when two educational researchers, H.G. Osburn and David Shoemaker, working under a U.S. Office of Education grant, developed a scheme by which the computer would construct questions about statistics. This scheme worked by completing a fixed part of the question called an item shell with words or numbers randomly selected from a set of possibilities called a replacement set. For example, a true-false question might be generated by the computer by putting together the shell, "The middle number in a distribution is called the" and a randomly selected word from the replacement set, "mean, median, mode." Note that in this simple example three variations of the true-false question are possible.

In item shell and replacement set schemes, every word that appears in a test question is first thought of by the item writer and entered into the computer. The computer is relegated to the trivial task of picking the words or numbers and putting them together using straightforward algorithms to produce the test questions. Although some attempts to have the computer "think" like a test constructor have been carried out, for the present the computer provides scant practical help to the item writer.

Constructing the Tests

The computer is used extensively to build tests, especially by commercial publishers and governmental agencies. This application is made possible by collections of items called item banks. Occasionally, items are kept only on paper while documentation of each item--its statistical properties, content descriptions, and so forth--are fed into the computer. The computer then can pick a collection of items that meets the statistical and content specifications of the test builder. It is then left to the test constructor to assemble the test manually.

More common, however, is the situation in which the items themselves are entered into the computer, together with several pieces of documentation. When the items are stored, the computer can both select appropriate items and construct and print the test itself. The successful and extensive use of the computer to assemble tests is in contrast to its minimal use to write items.

Instructors who teach the same subjects may develop an item bank which they share. Sometimes they obtain the item bank from a state or local agency or from a commercial source; at other times they construct their own items, perhaps beginning by using items available from others. The Northwest Regional Educational Laboratory, 300 SW Sixth Avenue, Portland, Oregon 97204, provides listings of available item banks and reviews of existing microcomputer programs that will construct tests from item banks. Most of the programs are too limited to be very useful. A few of the more recent ones, however, show promise.

Millman and Arter (1984) provide detailed information about item banks and test construction. They describe a wide variety of item banks, outline their advantages and disadvantages, list the conditions under which item banks have the most potential value, and provide an extensive set of questions to be asked in designing item-banking systems.

Large-scale test development programs will become increasingly computerized. Individual teachers can expect to assemble their tests from computerized item banks as quality software and microcomputers become available.

Administering the Tests

The glamour area in educational testing these days is computer administration of tests. What makes this area so fascinating is the ability to program the computer to consider a student's prior answers when picking the next question; that is, to select items for administration based on the student's previous responses. Thus, the examination given to each student can be tailored or adapted to his or her level of ability. It is this adaptive, tailored, response-contingent feature that gives computer-administered testing its major advantage over conventional test administration.

Adaptive testing, as it is most frequently called, has been put to use to help solve three knotty testing problems. The first is getting more measurement precision with fewer test items. It is a fact of psychometric life that the more test items given to a student, the more accurately the student's level of achievement or ability can be assessed. But teachers and students alike object to tests that take a long time to complete. Because the level of difficulty of the items a student is given under adaptive testing corresponds to the student's level of performance, they carry maximum information about the student's ability, with the result that adaptively administered tests can provide the same degree of precision as traditionally administered tests while using about half as many items.

The second problem attacked by adaptive testing is that of making test items simulate tasks that the student might face on the job or in other out-of-school situations. In adaptive testing, the computer can be programmed to permit students to progress through a program situation and to provide students with appropriate feedback. For example, in patient-management problems, a medical case is presented and the medical student indicates what actions should be taken. These actions might include observing the patient's physical condition, ordering laboratory tests, or prescribing medication or other treatments. The result of each action is given to the student, who proceeds to answer additional questions about further treatment.

The third problem that adaptive testing is well suited to handle is diagnosis of student learning problems. When a student misses a test question, the computer can be programmed to administer carefully selected similar items that can pinpoint the student's misconceptions or gaps in knowledge. With such information, the teacher can provide appropriate remedial instruction.

Although some large testing programs have begun to administer tests by computer, with positive reactions from those examined, it will be some time before classroom teachers routinely give their tests by computer. Tests embedded in instructional computer software are the exception. Questions asked of learners are an integral part of the teaching material, and such testing is often so nonintrusive that the students are not aware they are tested.

Scoring the Tests and Analyzing and Interpreting the Results

For many years, groups who administered many objective tests scored their own answer sheets by hand. Now desk top scoring machines connected to a microcomputer are available for a price that enables local schools and small colleges to have their own automated scoring and test reporting system. In a few more years, a majority of the medium- and large-sized school districts may score and report objective tests using locally owned equipment.

Computers have also been used to score short-answer questions and to grade essays. The procedure typically consists of matching the student's answer to key words provided by the test constructor. If the student supplies the key words or acceptable variations, credit is given for the answer. Somewhat aside, it seems that the science of short-answer and essay test scoring has not made any noticeable progress in the last 10 or 15 years, nor is it likely to do so using present methods.

A traditional function of computers in testing has been to analyze item and test data. The prowess of computers to manipulate numbers has never been doubted, and computers continue to provide test developers with a much valued service in this regard. Using item data stored in item banks, some of the more sophisticated programs can predict the score distribution and other test results before a planned test is actually administered.

Computer interpretation of test results, particularly those of psychological tests, is the most controversial of all aspects of computer testing. Many computer companies now administer and interpret the results from interest, vocational, personality and intelligence tests. The controversy stems in large part from the secrecy that surrounds the algorithms the computer uses to produce various interpretations. How the computer decides that a job applicant is a good risk or that client has suicidal tendencies is often shrouded in proprietary secrecy, and the validity of these interpretations remains uncertain.

Keeping Test Records

Another task to which computers are well suited is keeping track of test performance. Computers can store results in a record or grade book, produce grade reports, and develop a profile of test results for an individual student or for the class as a whole. Microcomputer programs that perform these functions are readily available and relatively inexpensive. The computer can be programmed to keep track of other statistics in addition to test scores: among these, the time taken to answer each question, the attractiveness of each foil in a multiple-choice item, and the proportion of students who answered each item correctly.

As discussed here, computers are employed in several areas of educational testing. The functions of computers in these areas can be integrated, which may lead to more efficient and acceptable testing practices. Using items from a bank, the computer can assemble and administer a test and, because the responses of computer-administered tests are entered directly into the computer, it can quickly score, record, and interpret the results. As computers and programs for carrying out these tasks become more readily available, we can expect a greater proportion of testing activities to be aided by computer. Although the computer can make the process easier to implement, the educational benefit that accrues to the student will depend on the quality of the items that make up the tests and on how the results are put to use.

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ISSUES IN IMPROVING URBAN SCHOOLS: DROPOUT PREVENTION, HISPANIC SECONDARY EDUCATION, AND URBAN TEACHING CAREERS

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Urban School Dropouts: New Perspectives on Causes and Solutions

One of the most highly publicized current problems in urban education has been the large numbers of students who drop out of school before graduating. Overall, rural schools have more dropouts than urban schools, but the problem is especially acute for urban schools because they lose greater proportions of students. Compared to nationwide dropout rates estimated at 14 to 25%, urban school systems often report rates of 30 to 43%, and the dropout rates of some subgroups of urban students are as high as 69% (Hammack, 1986). Any discussion of trends and issues in urban education might well begin by asking the question: what's new regarding dropouts? Although the problem of school dropout has risen to prominence in educational policy and practice in the past (e.g., Hoyt, 1962), this time around there are a number of significant differences.

First, public and professional interest in the dropout problem is arguably greater than ever before, for several reasons. The sheer magnitude of the problem is alarming. The dropout rate has been much higher in other eras; in the early decades of the century, only 10 to 20% percent of males graduated from high school, and even as recently as the 1950s the dropout rate exceeded 55% (Tyack & Hansot, 1984). Since 1980, however, the average educational attainment of the adult population has risen to nearly 13 years of schooling, in part due to relatively low dropout rates in the 1960s (U.S. Dept. of Commerce, 1985). A high school diploma has come to be regarded as the minimally acceptable level of attainment, and dropping out has become an economic liability as well as a social stigma.

The consequences of dropping out are increasingly serious. In an information-based, technologically-oriented economy, jobs for unskilled, poorly educated workers are more and more scarce; school dropouts cannot compete in such conditions and soon find themselves trapped in poverty and unemployment, with all the attendant problems. For example, in 1982, of the spring high school graduates who did not enroll in college (49%), 82% were employed, while the employment rate for 670,000 students who had dropped out of school that year was just over 48% (U.S. Department of Labor, 1983). Statistics from the U.S. Census Bureau indicate that dropouts earn on average approximately $4,000 less each year than high school graduates, and $7,500 less than persons with some college experience (American Council on Education, 1984). Economists and sociologists debate whether a diploma actually matters to those youth who, whether they graduate or not, might be on the bottom rung of the "economic preparedness" ladder, but it seems clear that an individual's options are seriously curtailed without that diploma.

The results of high dropout rates are detrimental for society as well. As stated forcefully in A Nation at Risk (National Commission on Excellence in Education, 1983), a poorly trained workforce weakens the productive social, economic, and political capacities of the country as a whole. Moreover, early school leaving is not distributed randomly across the population, but affects some racial/ethnic groups and social classes more than others. Conservative estimates from the "High School and Beyond" study put the rate for blacks at 17.2%, for Hispanics at 19.1%, and for students from low-income families at 22.3% (Peng, Takai, & Fetters, 1983). Other studies show rates as high as 47% for Hispanics and 61% for blacks in some urban areas (Hammack, 1986). In contrast to the notion of education as society's great equalizer, high school graduation becomes a mechanism of sorting and contributes to wide social and economic rifts within the social structure (Meyer, 1977). Clearly, the social goal of educational equity for all students is not being achieved.

Finally, the dropout problem is vexing because it thumbs a sad and defiant nose at the growing sophistication of the educational enterprise. Gage's observation, made some eight years ago (Gage, 1978), that educators have finally developed a scientific basis for their work is even more true today. Practitioners, and the researchers who systematize the knowledge of practice, claim advanced theoretical and technical understanding of how to teach students and run schools. State and local policymakers are holding schools accountable for delivering on what they promise and often stake their own political reputations in doing so. Hence, a persistently high dropout rate is a blight on the optimism of everyone concerned.

The growing interest in dropouts has encouraged greater quality and analytic complexity in the efforts to study the problem. There is, to begin, an effort to articulate more precisely the definition of a dropout and to standardize reporting practices within and among school districts (Morrow, 1986). Schools vary in the precision with which they maintain records on reasons for early school leaving (military service, pregnancy or marriage, transfer to a private school or move to another city) and which acts are officially considered "dropping out." Haphazard reporting practices may inflate or deflate a school's true dropout rate, often so that a school can become eligible for extra funding for dropout prevention or so that it can avoid a negative reputation. Districts also differ in the way dropout rates are computed. Some include ninth graders or special categories of students in the count, while others do not; some compute a yearly dropout rate for the district while others report longitudinal rates for cohorts of students. The baseline number used to compute dropout statistics might be a district's average daily attendance or its average daily enrollment. Closer attention to how dropout statistics are compiled by school districts will have three important effects: more accurate comparisons of school holding power between schools and school districts, better assessments of the effects of particular interventions on different types of dropouts, and a long-term improvement in the ability to target funding to areas of critical need.

Traditional dropout research has sought to identify the background characteristics, attitudes, and behaviors of dropouts, in an effort to locate causes and sometimes infer solutions. But this work has often led to broad generalizations that focus on ascribed characteristics of students--their race or social class, for example--which may not be the true roots of the problem. Furthermore, the usual, often implicit, conclusion has been that the deficiency rests with individual students, not with the school. The current work on dropouts does not assume that dropouts form a homogeneous group whose characteristics predispose them to school failure; it attempts to look more closely at variations in social and economic background, personality traits, or prior aptitude and school performance, and to examine why such characteristics correlate with early school leaving. Perhaps the most important development in the new forms of research has been to take school context as problematic and study how characteristics of schools--either independently or in interaction with student variables--affect dropping out. Such factors as school or class size, guidance services, tracking and ability grouping practices, curriculum and instructional quality, and student-teacher relationships may mediate individual characteristics to produce early school leaving. Either through the analysis of school variables themselves or through inferences about school context from student data, it may be possible to locate the responsibility for high dropout rates in policies or practices that schools initiate and have the power to change.

These new research directions have yielded a wealth of information and raised many questions. It remains clear, for example, that Hispanics and blacks suffer disproportionately high dropout rates. However, a closer analysis indicates that when other factors are held constant, blacks are less likely to drop out than whites and Hispanics (Ekstrom, Goertz, Pollack, & Rock, 1986), and their dropout rate has been in decline, from 26% in 1971 to about 18% in 1981 (College Entrance Examination Board, 1985). However, blacks experienced a significant increase in the dropout rate for 14- and 15-year-olds during this period, with the problem especially acute for black females. Dropout rates for blacks are also higher in schools with greater percentages of blacks (National Center for Education Statistics [NCES], 1985). These trend data suggest a number of possible contributing factors. Desegregation, compensatory education, and the improved economic status of some minority families may be helping more blacks to finish school, while such phenomena as rising rate of teenage childbearing have negative effects.

Ekstrom et al. (1986) note that dropouts in the "High School and Beyond" study tended to come from families with a "weaker educational support system." These dropouts had fewer study aids in the home, less opportunity for nonschool related learning, mothers with lower levels of formal education and lower educational expectations for their children, mothers who were more likely to be working, and parents who were less likely to monitor children's activities. Many studies report that the parents of dropouts typically did not finish school themselves, and a 1985 study in Los Angeles found that the parents of fewer than half of the city's dropouts encouraged their children to stay in school, while a fourth of the dropouts' parents actually encouraged them to drop out (Self, 1985). Family circumstances may lead some students to drop out against their own, and their parents', desires. More than 13%

of male dropouts in a sample of over 2,000 cited economic need or other family responsibilities as their reason for leaving school early (Peng, et al., 1983); for Hispanics this figure may be as high as 38% (Rumberger, 1983). Educators are using such findings, not to blame parents for academic failure, as was the tendency during the years following the major reports by Coleman (1966) and Jencks et al. (1972), but to provide an important rationale for school practices that improve parent support for and involvement in education. One of the benefits of targeting educational services to pregnant and parenting teens, for example, is said to be that helping young mothers finish school may improve their children's chances for educational success.

Early school leaving, as well as academic failure in general, is highly correlated with low socioeconomic status. For white and Hispanic students, the dropout rate declines steadily as socioeconomic status rises; the trend is generally true for blacks as well, though not as consistently (NCES, 1985). In fact, when socioeconomic status is held constant, race does not correlate with dropping out. But what is it about being poor that leads one to drop out of school? It could be simply the need for more money: in the national "High School and Beyond" study (Ekstrom, Goertz, Pollack, & Rock, 1986), 11% of the dropouts surveyed claimed that they had left school because their families needed the income they could get from a job. Family problems brought on by poverty--nonpermanent living conditions, poor nutrition, the need for older children to help care for siblings, or simply the lack of consistent economic and emotional security--may make it difficult for students to concentrate on school.

The hopelessness that pervades communities with persistently high unemployment may also curtail enthusiasm for school; economically disadvantaged students who feel that school will not help them get a job may drop out. Unfortunately, these feelings may be based on fact. For example, the vocational education programs in which many low-income students are enrolled have been severely criticized as being outdated, providing poor job training that does not lead to subsequent employment, failing to "certify" a student in the same way an academic track does, and in effect cheating students out of their futures (Oakes, 1983). General educational tracks have been similarly criticized for their inability to produce real student benefits. In a 1968 study (Comb & Colley, 1968), 73.2% of the students who dropped out of school had been enrolled in the general track, and 6.8% of the dropouts were vocational education students. Twelve years later, over 19% of sophomores enrolled in vocational education and over 16% of sophomores enrolled in general education left school early, compared with less than 6% of the academic track students (NCES, 1985). Such findings indicate that vocational and general education tracks have not succeeded in providing school programs that keep students in school, and have motivated educators to reexamine the learning needs of low-income students and to consider providing better work-school linkages, attending to the daily living problems of students and improving the quality of instruction in vocational and general education, as well as questioning placement of students in these tracks to begin with.

Being overage is another significant correlate of dropping out (Hammack, 1986). But being overage in itself does not completely explain why students leave school early. Although as many as 40% of dropouts leave school as soon as they are legally permitted to do so, others hang on longer. In New York, for example, almost 20% of dropouts are approximately 19 years old (Hammack, 1986). Foley and McConnaughy (1982) reported that many students in New York's alternative high schools are overage, but nevertheless enroll specifically in order to get a diploma, and often do so. Students apparently do not outgrow a desire for learning, so the correlation between being overage and dropping out may say less about students' failure to learn than about schools' failure to teach. Students who drop out may be succumbing to the cumulative effects of school failure, since most overage students have been retained in school one or more years. It is interesting to note that a significant proportion (as many as 17% of the "High School and Beyond" follow-up cohort) of high school dropouts re-enroll in an educational institution and eventually obtain a high school equivalency diploma. For all racial/ethnic groups alike, although vocational education and general education students tend to drop out more frequently, it is the dropouts from the academic curriculum who reenter some form of schooling at high rates (23.5% for whites, 31.8% for blacks, and 16.6% for Hispanics) (NCES, 1985). Apparently, these students have learned the value of schooling or have acquired basic skills well enough to be willing to pursue an education even when they did not succeed the first time around.

By far the most significant predictors of early school leaving are low academic achievement and behavior problems in school. Dropouts have lower grades and lower scores on standardized achievement tests. They do less homework, cut classes more frequently, and do not participate in extracurricular activities. Furthermore, they tend to have been suspended from school at least once and are more often absent or tardy (Ekstrom et al., 1986). Again, delving a bit deeper into the problem, interesting findings emerge. In an analysis of data that tested many possible causes for suspension, Wu, Pink, Crain, and Moles (1982) found great differences among schools in the rates at which they suspended the same kinds of students, suggesting that discipline problems may be a function of schools themselves and not simply student misbehavior. Similarly, actual differences in ability levels of dropouts are much smaller than might be assumed from their school performance and decision to leave school early. Research indicates that at least half of those students who drop out have the intelligence to complete high school, and that perhaps 10% could go on to college (Elliott & Voss, 1974). In fact, in the "High School and Beyond" survey, less than 10% of eventual dropouts predicted that they would not complete high school. Instead, among sophomores who eventually dropped out of school, 44% of the Hispanics, 60% of the blacks, and 45% of the whites expected to pursue education beyond the high school level. Although these figures may reflect societal expectations more than realistic personal aspirations, it does not appear that students leave school solely because they are not capable of doing the work or because they do not want to complete their education. Instead, it may be that they find themselves caught in a cycle of failure not entirely of their own making.

Dropping out appears to be a reasonably unpremeditated decision. Many students who drop out during the summer simply fail to return to school in the fall. During the school year, students drop out gradually by exceeding an allowable number of consecutive absences. If dropping out is not their deliberate intent, why do students do it? The majority of dropouts apparently stop coming to school for one simple reason: "they do not have much success in school and they do not like it" (Wehlage & Rutter, 1986). Surveys of dropouts, both before and after leaving school, indicate that they do not feel that teachers are interested in them, they are dissatisfied with the fairness of school discipline practices, and in general they are unhappy with the way their education is going. Life without school--whether it be working or raising children--appears preferable to staying in school.

In an analysis of how schools contribute to the dropout problem, Wehlage and Rutter argue that

> The act of rejecting an institution as fundamental to the society as school must also be accompanied by the belief that the institution has rejected the person. The process is probably cumulative for most youth. It begins with negative messages from the school concerning academic and discipline problems. As these messages accumulate into concrete problems--failing courses and thereby lacking credits required for graduation--the choice is between continuing an extra year or more in a setting that offers increasingly negative experiences and dropping out (Wehlage & Rutter, 1986, p. 385).

The process of dropping out of school may begin as early as the primary grades. Lloyd (1978) found that by the third grade, student differences in achievement, ability, family socioeconomic circumstances, and retention enabled researchers to predict accurately the later educational attainment of 75% of the students studied. The two most highly predictive kinds of achievement--reading achievement and language skills--are clearly within the domain of school influence, as is grade retention and, to some degree, ability. It may be that within the first few years of public education, schools have already sorted students into those who will and will not succeed, and have begun to "educate" them accordingly. Some students then move to the "margins" of school life in a series of stages, often beginning with desperate attempts to survive in an environment that blocks their chances for success, and then moving toward a rejection of school values and goals that leads to either passive withdrawal or defiant rebellion (Sinclair & Ghory, 1986). Any serious attempt to reduce the dropout rate must focus on school factors which contribute to this process and which schools themselves can change. It appears, for example, that large classes in large schools alienate students and produce dropouts. Programs which do not help students develop clear postgraduation plans for themselves foster early school leaving. Instruction that neglects the individual needs of students, or that does not provide the opportunity for all students to experience success, may push students out of school. Prejudicial disciplinary practices may lead to frustration and failure. Tracking masks great inequities in the allocation of resources, which may drive students away. Those students who are assigned to the general education track, for example, receive less rigorous instruction, less guidance, fewer high-quality teachers, and less of other school resources (Amato, 1980; Oakes, 1982); it is little surprise that they fail to develop concrete educational or career goals and drop out. In these and other areas, educators need to evaluate the effects of school policies and practices and change them in order to reduce the likelihood of students dropping out (Natriello, Pallas, & McDill, 1986).

One result of acquiring a body of information on dropping out has been an effort to identify "potential dropouts" and develop early interventions for them. Such services must be planned to address the real problem of dropping out, and not just its symptoms. For example, excessive absenteeism is often a precursor to dropping out. However, Lloyd (1978) found that absenteeism appears later than the other student variables that correlated with eventual dropping out, indicating that it may be the result or manifestation of other school-related problems. Thus, although strategies such as close attendance monitoring or contests to motivate students to come to school may make it harder for students to drift away from school, it is important to analyze why students are absent. Such an analysis might implicate a weak curriculum, an uninterested teaching staff, or a school climate unresponsive to student and community needs, and might lead to interventions of a very different nature.

In this vein, schools might reduce the possibility that the process of dropping out will begin by building from the known strengths of the system identified through educational research. Studies of early childhood education, for example, indicate that participation in preschool programs is associated with later success in school (Consortium for Longitudinal Studies, 1983). A follow-up study of the Perry Preschool found that, with socioeconomic factors held constant, preschool "graduates" had lower dropout rates than peers without preschool, as well as a lower rate of teenage pregnancy, itself a major correlate of early school leaving (Berreuta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984). A large-scale longitudinal study of desegregation found that black students who attended desegregated high schools had lower dropout rates and higher overall achievement than comparable students in largely-black schools (Crain, Hawes, Miller, & Peichert, 1985). Schools which make an explicit effort to become and remain free of violence, vandalism, and disruption tend to have higher student achievement and lower dropout rates as well (Schriro, 1985). Finally, from the comprehensive research focus on the "instructionally effective school," findings indicate that in schools with a commitment to the goal of student achievement and the means for creating success (including high expectations, competent instructional leadership, and staff quality and continued development), failure rates are low (Berube, 1983). In all of these areas, as in much social science research, the direction of causality is difficult to ascertain. But the evidence is strong enough to indicate that educational improvements such as these are warranted.

Despite the best efforts of schools, some students will inevitably move away from school engagement and toward dropping out. In these cases, it is important for educators to provide services that attempt to reclaim at-risk students and help those students already in the "dropout pipeline." Ekstrom et al. (1986) recommend that schools develop specific services to meet the needs of four kinds of potential dropouts: pregnant teens, students who work while attending school, students who cannot function in the regular school environment, and students whose home or community environment interferes with school success. In his review of the literature on dropouts, Self (1985) summarizes ways in which schools can discourage dropping out, including close monitoring of student attendance and achievement progress, early contact with parents when problems surface, adequate guidance services, and a wide range of extracurricular activities that appeal to marginal students. In-school alternatives to suspension may also help keep problem students used to coming to school. Sinclair and Ghory (1986) describe services for students at different stages in the process of dropping out. For instance, students who are beginning to experience debilitating frustrations due to school failure seem to need intensive guidance and individualized learning opportunities that rebuild confidence. Students who no longer accept the goals and norms of school--those who are just sitting it out for a while--seem to benefit from programs that negotiate flexibly between school standards and their own values. Students who have been disruptive often respond to much smaller schools and classes and more person-oriented programs, as in many alternative schools.

Successful programs for at-risk students appear also to employ individualized instruction, low student-teacher ratios, more autonomy, and additional guidance and other support services (Hamilton, 1986). They have strong vocational education components (as vehicles for teaching academic skills and knowledge more than for job training), offer career education, and incorporate work experience and other out-of-school learning into the instructional program. In short, these programs modify the school to fit the needs of students.

By looking more closely at the school factors that contribute to dropping out, educators are able to move beyond a discrete problem, with its own specific causes and solutions, to systemwide evaluation and change. Information on dropouts should function not only to identify isolated trouble, but as a sort of warning valve for the educational system as a whole. When it becomes apparent, for example, that dropping out can be predicted from data from students' third grades, or that a general education track provides students with a different experience of schooling that does not serve them well, educators cannot ignore fundamental deficiencies in the overall school program. The fact that some students manage to pass courses and graduate while others fail does not absolve the schools of responsibility. And in urban areas, where so many students leave school early and many others acquire only the most minimal education, educators must take extra care to ensure that all students have real opportunities to succeed.

Improving Hispanic Secondary Education

Hispanic students have not profited from their education, nor have they been well served by the schools. Their academic achievement and educational attainment are among the lowest of any group. Nationwide, in 1984 only 60.1% of Hispanics between ages 13 and 24 were high school graduates and only 17.9% were enrolled in college. The comparable figures for whites are 83% and 28%; for blacks 74.7% and 20.4% (U.S. Department of Commerce, 1985). Clearly, unless educators can better educate Hispanic students, they will have limited opportunities for social and economic well-being.

This is not only a matter of equity, however. Hispanics (and blacks) are becoming a considerable part of the potential work force, particularly in the large metropolitan areas in which they are likely to continue to live. By 1995 the Hispanic percentage of 15- to 19-year-olds in San Antonio will be 60%, in the Los Angeles metropolitan area over 45%, in Miami 40% in New York 26%, and in Chicago 15% (Valdivieso, 1986). Economic growth and community well-being are linked to the fate of these youth. A failure to adequately educate them clearly means a loss of essential human capital.

Why Hispanic students have not succeeded better in the schools is a simple question requiring a complex answer. Many Hispanic children are born into families living below the poverty level and headed by unmarried females. The poverty rate for Hispanics under 18 is 38.2% as compared to 17.3% for whites. This social background, it is thought, places Hispanic youth at particular educational risk, especially since Hispanic families in the past have participated less in programs like Head Start, which prevent or reduce the developmental problems of early growth in a poor home (Valdivieso, 1986). Hispanic youth also tend to come from homes with mixed English-Spanish language background. Although most Hispanics speak English, and many are native-born, students who are not English-dominant, even if they are bilingual, are likely to be early school failures and to drop out before reaching high school. Hispanic youth in the bottom third of the socio-economic distribution (poverty level and below) leave school at two to five times the rate of their more advantaged counterparts (Hirano-Nakanishi, 1984).

Schooling for Hispanics, however, has not forestalled this potential for failure. In part this is so because we have had inadequate information for improving their school experience, but, more important, conventional schooling ignores or works against their educational needs. We can learn a good deal by looking at attainment and achievement data of both Hispanic dropouts and survivors alike. Hispanic dropout rates are high in the metropolitan areas in which they are a large part of the student population; in New York City nearly 80% of all Hispanic students drop out before graduation, in Chicago 70%, in Los Angeles 50%, in Miami 32%, and in San Antonio 23%. Approximately 40% of Hispanic students drop out before their sophomore year in high school because they reach age 16 before they reach tenth grade (Valdivieso, 1986). Hispanic students drop out in the junior high school years or even earlier because of general academic failure, poor grades, and grade retention. These students usually have limited English proficiency; non-English-speaking Hispanics leave school before the tenth grade at the highest rate (56%). The more English the child speaks, the less chance he or she will drop out although it does not make any difference whether the child speaks only English or is bilingual. The ability to use a language other than English proficiently is not a barrier in school as long as the child is proficient in basic English (Hirano-Nakanishi, 1984).

A second wave of Hispanic students drop out while in high school (almost 25%). Many of these students are overage because their previous academic problems, including language difficulties, have kept them behind. Continuing poor achievement, being ahead of their peers in physical and emotional development, and often the pressure to work to support their usually poor families, or among the females to marry and have a baby, combine to produce additional dropouts. Approximately 19% of the national Hispanic student population drops out between the tenth and twelfth grades. That many of these students might have stayed in school had they been offered more English instruction, and a better opportunity to learn to read and write in English and to do math and science, and received better grades, is an important but unanswerable question now. About this population we know that as many as 56% are enrolled in general education programs, which have unclear goals and are not well-structured for concrete learning. Poor grades, a seemingly empty academic program, the possibility of earning money on a job, and family demands may make dropping out an attractive alternative for failing Hispanic students.

Among the approximately 60% of Hispanic students who do graduate from high school, only about 15% can be considered academically prepared. The remaining group for the most part report grades of C and D and enroll in remedial math and English classes. Unlike other students, most of these Hispanic survivors lose academic ground in high school; in "High School and Beyond," a large-scale U.S. Department of Education study to track the secondary and postsecondary experiences of American youth, 1980-82 Hispanic achievement test scores dropped between the sophomore and senior year. Many Hispanic students were enrolled in general and vocational education programs and thus automatically took fewer of the academic courses needed for increasing intellectual ability and subject matter achievement (Valdivieso, 1986).

Although those Hispanic students who remain in school are more proficient in English than their counterparts who drop out, their language difficulties contribute to their poor academic development. The early goal of bilingual education, as a compensatory intervention, was to bring students not proficient in English into the educational mainstream and thus to reduce their rates of dropping out and cumulative academic failure. Many Hispanic students are considered language proficient because they can use English in context, in social situations where the communication setting provides the linguistic cues, which the child can learn easily; however, a large number of these students are not proficient in decontextualized English, the language of academic learning. They are mainstreamed into the regular classroom because their language proficiency is measured by their ability to use contextual language (Hakuta, 1986). Only newly arrived immigrants receive sufficient special language instruction in the secondary school. Because Hispanic students likely receive less special language instruction than they need, whether it be English as a Second Language or bilingual education, they are continually at risk for low academic achievement, grade retention, and insufficient academic learning.

Hispanic youth, dropouts and survivors alike, do not attend schools adequately organized to meet their needs. The local school as we now know it is irrelevant to the lives of many Hispanic secondary school students and illegitimate because it does not help them attain the credentials that they need. Most Hispanic youth, especially males, work while in high school; their earnings are used to maintain the family economically rather than for personal consumption, unlike the earnings of other youth. Hispanic youth, especially males, may work as many as 20 or more hours per week while in high school. This work is not acknowledged by the schools nor integrated into the students' programs, and there are no special scheduling arrangements, course credits for work, or coordination between school and work to teach particular skills. Similarly, Hispanic students receive very little academic or career guidance; they are likely to make curricular choices alone because, unlike many other students, they cannot receive advice from their parents who are uneducated and unsophisticated about the implications of the choice of a particular program. Many Hispanic students in noncollege preparatory programs intend to go to college because they believe that college naturally follows high school, but they were never to told to enroll in a particular program to make this progression real. Most Hispanic students rarely see a counselor (the counselor-student ratios in most large urban high schools exceed the recommended ratio of 250 to 1), let alone a Spanish-speaking counselor who can communicate with their parents. Hispanic students must rely on their counselors and teachers to make educational decisions, but because of their social background and academic achievement, and the perception of a lack of parental interest in their education, counselors advise them to enter the labor market, not to go to college. They are advised to enter a vocational or general education track, making it impossible for them to receive the academic learning necessary for postsecondary education (National Commission on Secondary Education for Hispanics, 1984). The benefits of a general or vocational education, however, are questionable. Vocational education programs provide few immediate or later advantages in the labor market. Fewer than one-third of Hispanic vocational education program graduates work in occupations for which they were trained. And enrollment in a general education program is an invitation to drop out.

To avoid the neighborhood school where they have few opportunities for academic instruction, Hispanics often must go to the Catholic high school, frequently outside of their neighborhood, where they may achieve better and graduate. Many inner-city Hispanic parents with small incomes send their children to Catholic schools, because they feel that these schools teach useful knowledge and skills, like reading and writing, unlike the neighborhood school where many Hispanics are merely taught "life skills."

Unquestionably, for Hispanic students to succeed in academic courses in high schools they will have to be better prepared earlier. This means that in the early grades the schools should provide good second language instruction and offer Hispanic students undiluted academic course content at a progressively more advanced pace. The improvement of elementary education has already borne some fruit. Since 1975, the first National Assessment of Education Progress in which they were identified, Hispanic 9-, 13-, and 17-year-old students have steadily improved their reading proficiency scores. Many Hispanic students, however, still read below grade level; the average reading proficiency of Hispanic 17-year-olds is only slightly higher than that of white 13-year-olds (National Assessment of Educational Progress, 1985). (It must also be remembered that Hispanic students whose English is too limited are not included in the NAEP testing). More Hispanic students are also graduating from high schools; the proportion of 18- to 24-year-old Hispanics who are high school graduates rose from 52% in 1972 to 60% in 1984 (U.S. Bureau of the Census, 1985), and Hispanic student scores on college entrance examinations have also slowly risen.

Secondary schools, however, cannot be content to depend on these improvements and simply maintain the achievement levels of the students that they receive. Hispanic students are more likely to drop out in the eighth and eleventh grades--in the middle of secondary school, that is--than at transition points to junior or senior high school where their most recent accomplishment motivates them for more education (Hirano-Nakanishi, 1984). The secondary school itself plays a role in creating student success or failure. We have ways, however, of improving the educational attainment of at-risk students. Clearly we can reduce the number of dropouts by reducing the size of classes, by providing intensive individualized instruction in the basic skills in conjunction with work-study projects, with concentrated school counseling and the support of families and social agencies (Hodgkinson, 1985). For the Hispanic potential dropout and survivor the high school should be reorganized into small and diverse academic and support units, instead of academic, vocational, and general education tracks. The result would not be ability grouping, which in the past has meant that some students received an inferior education and a confirmation of their low self-esteem, but rather a form of "intellectual desegregation." The benefits of social contact between the races were the educational basis for school desegregation; the intellectual contact of mixed ability students, especially in the early secondary school years, can increase the number of students who will identify with the academically successful student and thus achieve better.

Many students, however, may not succeed as quickly or as much even under improved conditions. If they are to remain in school and learn, they need incentives and support, like a guarantee of a job or college admission upon graduation. They will also need to take more time to complete high school--without stigma. For Hispanics especially this longer stay in high school can be integrated with part-time work. We already accept the part-time college student who works and goes to school at the same time as a legitimate student. Some students may never succeed academically, however; for them to stay, schools must give equal weight to excellence in all areas, not just test scores, although this is especially difficult at present when the school or school district itself is measured only by academic criteria.

At-risk students achieve better and find schools more legitimate in alternative programs. For many citizens, however, alternative educational practices violate a belief in a common, uniform education for all students, even though accelerated classes, vocational education, and gifted and other types of special education are part of the culture of the American school. When they do exist in the high schools, alternative practices are frequently local and short-lived. This is especially so for alternatives in the education of ethnic minorities. The debate over the value of bilingual education, for example, is a social argument, not a scientific one; otherwise we should be more patient in waiting for the scholarship to prove its success or failure. To many, bilingual education is dangerously pluralistic ethnic education, not the compensatory practice it was originally designed to be. But to consider "uncommon" any educational alternative for educating ethnic minorities is to misrepresent the meaning of commonality. In many urban schools Hispanics (and blacks) are the majority population. Because ethnicity is a central reality of their lives, it also must be of their schooling: workable educational alternatives designed for these students should not be considered exotic and uncommon.

Attracting and Retaining a High Quality Urban Teaching Force

It is widely agreed that the teaching profession is currently in a state of crisis. Basic changes are needed in the ways teachers are educated and in their professional roles, in status and remuneration, in order to ensure adequate quality and quantity of teachers for the future. These issues have an impact for all of education, but are especially critical for urban schools. Teachers are the most numerous resource in urban schools, they have the most direct and frequent impact on students, and, by virtue of their enthusiasm, resistance, or indifference, they can determine the outcomes of many educational policies and innovations. For many urban students, their teachers may also be an important link to the adult working world and a source of care and support. If urban students are not well served by their teachers, they may suffer personal as well as educational loss.

Long-term improvements in the quality of urban teaching are dependent on major reforms in the profession as a whole. Some improvements, however, can be made now if educators attend to three major concerns: designing appropriate preservice education programs for urban teachers, improving recruitment practices, and structuring work conditions to ensure the retention and continued development of competent professionals.

Each year, urban school districts must fill many thousands of teaching positions. But in the midst of a nationwide teacher shortage, when the number of new teacher education graduates is declining relative to projected needs for new teachers, large urban school districts are having the most trouble filling their teaching rosters (NCES, 1985). Most urban districts apparently are able to hire nearly enough teachers, but this general statement masks a number of concerns. For example, there are critical shortages of teachers for large numbers of special education and bilingual education students in urban districts. In a recent year, over half of the 160,000 Spanish-speaking children in Los Angeles schools were receiving no bilingual education whatsoever, and at least two major cities (New York and Atlanta) are recruiting teachers from foreign countries to meet such needs (Bruno & Marcoulides, 1985). Additionally, the number of minority teachers in urban districts is decreasing at the same time that minority students are becoming the largest segment of the urban student population. The chances are high that an urban student will complete 12 years of public schooling without having had even one minority teacher. For minority students, this means that they are deprived of successful role models and teachers who may have a special understanding of their problems and needs (Webb, 1986).

Some teaching positions, especially those in the "worst" schools, are not filled at all, resulting in larger classes and extra burdens for other teachers. Furthermore, 1983 data indicate that as many as 14% of newly hired urban teachers are uncertified in their main teaching field, compared to only 7 to 8 % of suburban and rural new hires (NCES, 1985). Many new urban teachers quickly quit their jobs or stay only long enough to get the experience that will qualify them for other, less stressful teaching jobs (McIntire & Hughes, 1982). Finally, many new teachers come to the urban schools from other occupations. A study in New York City found that the average age of new teachers was 33.6 years, and that over half had spent an average of 3.7 years in another occupation (Sacks & Brady, 1985). Whether such teachers are an asset or a liability to urban schools is unclear: they may be more mature and more committed to teaching than other applicants, or they may have character flaws or skill deficiencies that caused them to fail in other occupations and will have the same result in teaching.

These problems illustrate the seriousness of concerns about the quality and preparedness of new teachers in the urban schools. With such diversity of background and education, there is no guarantee that these beginning teachers will have the knowledge or skills to perform well or, moreover, that they will be able to fulfill their own personal and career objectives through urban teaching. More urban teachers than suburban or rural teachers report that they are not satisfied by teaching, that they would not enter teaching if they had it to choose over again, or that they do not not want their children to become teachers (Farber, 1984; NCES, 1985). The high rates of attrition for first year teachers are another indicator of the problem. In New York City during a recent two-year period, 779 teachers quit in their first year on the job; 53% of these left within five months, and over one quarter left in the first month of teaching. In exit interviews, these teachers cited difficulty with discipline, bureaucratic red tape, and curriculum problems as some of their reasons for giving up. Even the first-year teachers who stay on the job report concerns that they are not able to help their students or to cope with organizational constraints (Sacks & Brady, 1985). For new teachers who enter the profession because of a love of learning and to be of service to young people, this frustration can be severely disillusioning; the results are equally disappointing for others who chose teaching in order to gain prestige, approval, or some other personal benefit.

Many urban districts are making efforts to recruit better-quality teachers. Offering higher starting salaries allows some districts at least to remain competitive with their suburban neighbors, who often not only have the edge in attracting the most qualified beginning teachers but are also prone to entice experienced teachers away from city schools. Other districts are using internships and other means to identify promising teachers and to give them specific on-the-job training before hiring them outright. For example, Houston has gone so far as to try to "grow its own" urban teachers. Through a cooperative arrangement between the city school district and three colleges, high school students who showed interest in teaching were identified and encouraged to pursue a career in education. Extra supports were provided to teacher education students in college, to maintain their interest and to prevent attrition, a particular problem for Hispanics and low-income students. In addition, freshmen and sophomores at the University of Houston were employed as teacher aides in the public schools, as were students in community colleges, as a way of providing financial support and practical experience; and college juniors and seniors were employed as substitutes in a "Work-Earn-Learn" program (McIntire & Hughes, 1982).

Academic courses about urban education are important introductions to the field for preservice teachers (Kapel & Kapel, 1982). Unfortunately, while such isolated courses do exist, teacher training programs specifically focused on urban teaching are relatively rare. Ideally, preservice education should serve three purposes: to orient prospective teachers to the social, cultural, and organizational context of urban teaching, to motivate them to seek teaching positions in urban districts, and to develop the curriculum and instructional skills necessary for teaching diverse populations. Because the "cultural disorientation" experienced by many ill-prepared urban teachers is a major cause of their leaving the profession or transferring to suburban or rural schools, preservice programs should ensure that this disorientation does not develop. The paternalistic cultural deprivation rhetoric of the 1960s, whereby urban teacher candidates were taught to understand the "deficiencies" of minority or lower class backgrounds and their consequences for education, has thankfully given way to more value-free conceptualizations of the cultural differences that must be understood if schools and teachers are to be responsive to urban constituencies.

Urban teachers need to learn such skills as how to develop and implement multicultural curricula, how to individualize instruction for students with a wide range of learning styles, how to deal with differences in language usage, how to mainstream limited-English speaking students into the instructional program, and how to cope with high rates of student mobility often found in urban schools. In general, it is felt that early and extensive urban-based field experiences, of high quality and sufficient variety, are critical for developing commitment to urban teaching and understanding of the problems and potential of urban schools. Many field programs are jointly planned between teacher training institutions and urban school districts (Kapel & Kapel, 1982). In New York, one urban teacher training program provides specific experiences that will help prospective teachers to succeed in urban education. These include extensive field experience, so that students can discover whether they really want to teach and can acquire skills through a gradual, cumulative process; opportunities to work with a variety of curricular programs, grade levels, and types of teachers and students, in order to replace idealistic preconceptions with realistic expectations; the chance to apply educational and psychological theories to practice; and early exposure to working with other teachers, to counteract the tendency toward professional isolation which many teachers experience (Gamble, 1985).

Attracting minorities to the teaching field and helping them to succeed in college and become certified to teach is an important component of upgrading the urban teaching force. Minority students, particularly Hispanics, are prone to drop out of higher education because of lack of money as well as achievement problems. If they do succeed in graduating from college, minorities then tend to fail teacher certification examinations at higher rates than others do. In response to these problems, training programs--especially those at predominantly black colleges--are beginning to provide extra financial aid, support services, and additional instructional help to minority teacher education students (Webb, 1986).

Once hired by city schools, new teachers need help adjusting to and succeeding in their new roles. Too often, novices are given the most difficult assignments in overcrowded classrooms of troubled schools, while experienced teachers with seniority are transferred to more attractive situations. It is unreasonable to assume that such practices will cease. But new teachers can be helped to succeed even under the most trying conditions. Some urban districts use intensive orientation programs to help beginning teachers adjust to the complexities of their jobs, with such features as "foul language desensitization," role playing with "tough" urban students, and discussions with parents and principals about what is expected of them (Foster, 1982). Other districts pair new teachers with experienced mentors to give support and advice about classroom management and motivational techniques, to help new teachers distinguish between problems inherent in the teaching situation and those caused by the new teacher's attitudes or behavior, and to help them deal with discouragement and even hostility toward students or the school environment (Foster, 1982; Sacks & Brady, 1985).

As serious as the problems regarding new teachers are, maintaining a competent staff is an equally critical concern for urban schools. In 1983, new-hires comprised only approximately 6% of the teaching force in large urban districts (NCES, 1985). Teachers with experience can be valuable assets, and some urban school districts are using incentives such as raised salary ceilings and upgraded retirement benefits to keep teachers on the job longer. But if city schools want to retain a proven, experienced staff, they must address two accompanying problems: how to prevent "burnout" that may result from stress accumulated over years of teaching, and how to ensure continued professional growth.

Teacher stress has been much discussed, and by now it has mythic as well as realistic connotations. Contrary to some prevalent notions, not all urban teachers are overworked, unappreciated, frazzled, frightened, or depressed. Nevertheless, there are some aspects of the work lives of urban teachers that do create stress. Shortages of instructional supplies and equipment, poorly maintained school buildings, concerns over personal safety, excessive paperwork, and the lack of support or appreciation may add stress to teachers' lives. Students who are overage, who have serious educational deficiencies, who frequently misbehave, or who lack motivation can present problems for which teachers are ill prepared (Hubert, Gable, & Iwanicki, 1984; Schwartz, Olson, Bennett, & Ginsberg, 1983). Teachers in urban schools also report that they rarely find help or support from school administrators or parents and that they do not feel a supportive sense of community within their schools (Farber, 1984).

Urban districts are attempting to help teachers cope with the stressful aspects of their jobs by offering crisis services, ongoing support groups, and workshops on causes of stress or stress management. Some districts offer "combat pay" for teaching difficult schools, although wage incentives have not been shown to increase overall teacher satisfaction (Bruno & Negrete, 1983). Importantly, many aspects of current school improvement processes not only raise student achievement but also help to alleviate stress for teachers. Involving teachers in program planning and evaluation, and helping them to make clear connections between their efforts and student outcomes, adds to teacher satisfaction and reduces stress (Rosenholtz, 1985). New forms of inservice professional development are similarly beneficial. Teacher centers and peer supervision, for example, are replacing more passive forms of inservice training and helping teachers to renew their motivation and engagement in urban teaching.

Some of the most intractable problems that affect teachers in city schools--those that have to do with the organization of large urban systems, as well as those engendered by a heterogeneous student population with diverse, often dramatic, needs--will not be solved by improving teacher preparation, recruitment, or inservice training. But teachers can be helped to be more responsive to the needs of urban students, and in doing so will improve the quality of their own work lives as well.

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